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Medical Lib

CLINICAL MEDICINE

A MONTHLY
POSTGRADUATE COURSE

December, 1925

Vol. 32, No. 12

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DR. T. CLIFFORD ALLBUTT

Clinical Medicine

A Monthly Postgraduate Course

Vol. 32, No. 12

December, 1925

The Right Hon. Sir T. Clifford Allbutt

K.C.B., M.D., LL.D., D.Sc., F.R.C.P., F.R.S.

THOMAS CLIFFORD ALLBUTT was born in Dewsbury, Yorkshire, England, on July 20, 1836, the son of the Rev. Thomas and Marianne (Wooler) Allbutt.

His early education was by private tuition at Ryde, Isle of Wight, and his school days were passed at St. Peter's, York.

He entered Gonville and Caius College, Cambridge, in 1856, gaining a classical scholarship in his first year, and receiving his B.A. degree in 1859. His clinical education was received at St. George's Hospital, London, and he also studied for a time in Paris. He took the degree of M.B. at Cambridge in 1861; the M.A. in 1867; and the M.D. degree in 1869, in which year, also, he married Susan, the daughter of Thomas England, of Headingley.

While at St. George's Hospital, he formed a friendship with Dr. J. A. Lockhart Clarke and George Henry Lewes, and through the latter he came to know "George Eliot", who without doubt found in him the original of Lydgate in her novel *Middlemarch*.

In 1862, he was appointed honorary physician to the Leeds House of Recovery, and in 1864, honorary assistant physician to the Leeds General Infirmary and Fever Hospital and lecturer in the practice of physic in Yorkshire College, Leeds. Two years later he began to lecture in anatomy as well.

He remained on the active staff of the Leeds General Infirmary until 1884, when he gave up the charge of beds and joined the consulting staff, where he remained until 1889, when he was appointed a Commissioner in Lunacy and held this post for three years, until he was appointed Regius Professor of Physic in the University of Cambridge and elected a Fellow of Caius College.

He became a member of the Royal College of Physicians, of London, in 1878 and a Fellow in 1883. He was an examiner for the College in 1899; censor in 1905-6; and member of the council in 1906-7. He was awarded the Moxon medal in 1921.

In 1867, being dissatisfied with the clinical thermometers, ten inches long, which were to be found in some hospitals but were rarely used, he had made, by a firm in Leeds, the first short and practicable clinical thermometer.

Dr. Allbutt was a prolific and interesting contributor to medical literature, dealing with a variety of subjects. He was the author of one of the earliest papers on the use of the ophthalmoscope in diseases of the kidneys and other general disorders.

But his literary fame rests securely upon the universally-known *Allbutt's System of Medicine*, of which he was the editor and

driving force, and also a contributor to every volume except the first. The first volume of this monumental work appeared in 1896 and the last (the eighth) in 1899. In producing the second edition, he had the very able assistance of Dr. Rolleston, and the *System* was not merely revised but very largely rewritten, the last volume appearing in 1912.

Allbutt received honorary degrees of all sorts from many institutions of learning in his own and foreign countries, and was a member and frequently an officer of a great number of scientific societies. He was an honorary member of the American Association of Physicians and the American Academy of Arts and Sciences, and an honorary Fellow of the New York Academy of Medicine.

During the War, in spite of his advanced age (he was 78 years old when war was declared), he was made an Honorary Colonel of the Eastern Division, Royal Army Medical Corps, and did much work in an advisory capacity in many directions.

Dr. Allbutt's active professional work continued practically up to the day of his death, which occurred suddenly on February 22, 1925, at Radegund's, Cambridge, he being then well advanced in his 89th year.

Nature's best use for genius is to make other men think; to stir things up, so sedimentation does not take place; to break the ankylosis of self-complacency; and start the stream of public opinion running, so it will purify itself.—Elbert Hubbard.

PNEUMONIA

Pneumonia has been aptly called the "Captain of the men of death", and in this number we are trying to give you as wide a variety of weapons as possible for waging your ceaseless war upon this redoubtable enemy.

In going over the manuscripts of the leading articles and in searching the current medical literature for the abstracts which you will find on pages 878 to 881, there seem to us to be two or three matters which are not sufficiently stressed, so we are calling your attention to them here.

In making your diagnosis, use the laboratory as freely as you can, but remember that pneumonia was diagnosed and treated before we knew anything about x-rays or laboratories, as we now understand them; and, whether you call for aid from the technicians or not, do not neglect your minute and thoughtful *physical examination* in any case. It will frequently give you vital

information long before you could get reports from a laboratory and it will increase your skill and strengthen your confidence in your diagnostic ability. In most cases, it will be all that is needed, but, in obscure cases and in those which do not progress as they should, *get all the help you can*, from whatever source—you will need it!

Having made your diagnosis; prepared the family for a siege of serious illness and vaccinated them with combined pneumococcus vaccine (for we feel that the prophylactic value of this procedure is sufficiently established to warrant you in carrying it out); arranged for a thoroughly competent nurse; and put the sick-room in the best condition for the battle which is about to begin, what measures of treatment will you institute? You will find many answers in the following pages.

It is very well, in most cases, to "bleed the patient into his own vessels", by the administration of aconitine and veratrine, but do not forget that, in those robust, full-blooded, sthenic cases which we sometimes meet, immediate relief of pressing symptoms and much good results from bleeding the patient *out of his vessels*, by means of an old-fashioned phlebotomy (see page 876, of this issue for a simple and effective technic), withdrawing as much blood as the case in hand seems to require—usually 200 to 400 Cc. This is one of the few circumstances where bleeding can be practiced to good advantage, and, in properly selected cases, the results are prompt and positive, especially when there is cyanosis and air-hunger. Do *not* bleed after improvement has begun or you will lose some of the antibodies which are forming.

In addition to the drugs mentioned in the various articles, do not forget the importance of giving *lime salts* in all cases and at all stages.

In the *Med. Rec.* for November 5, 1921, Dr. Samuel Stern recommended the free use of sodium citrate and the tartrates in treating these cases. We have had personal experience of this method and strongly recommend it. Give 2 *drams* of sodium citrate, dissolved in 8 *ounces* of water and flavored with sugar and lemon juice, every *two hours* (children in proportion), and continue until the temperature and pulse have been normal for 48 hours. If the urine is alkaline, substitute the tartrates or alternate them with the citrate. Supplement with the free use of fruit juices, espe-

cially those of grapes, apples and cranberries. This treatment *works!*

Save your patient's strength in every way and by every possible means. Reserve your stimulants—not forgetting strophanthine, caffeine, nitroglycerin (in sturdy men, sometimes) and adrenalin, which Sajous especially recommends for senile patients in doses of 7 minims, intramuscularly, every three hours—for the moment when your patient's powers of resistance begin to fail. Do not whip the horse while he is going strong!

Above all, plan your campaign against pneumonia *in advance*. When the case presents itself there will be no time to study it up—you will have to take off your coat and *go to work*. Remember that your battle will be won or lost in the *first three days*, and act accordingly. *Know* what you are going to do, and do it *boldly*.

If your case progresses well for a while and then comes to a standstill, do not wait for days or weeks to see "what is going to turn up", but find out what is wrong and *go after it*.

No man ever cured a case of disease—cures are wrought by God or by Nature or whatever you wish to call the Power which animates the universe—but there are few diseases in which the physician can *cooperate* with that Power to such marked and beneficent effect as in the treatment of pneumonia.

The highest reward that God gives us for good work is the ability to do better work.—Elbert Hubbard.

EUTHANASIA

The question as to whether a physician is justified, under any conditions or circumstances, in putting a merciful end to any human life which is certain to last but a few days, or weeks, in any case, and whose prolongation is attended by insupportable physical agony to the patient and mental anguish to the relatives and friends, or to the so-called life of a monster or a being who is hopelessly deformed or defective, is no new one, though it has been brought prominently into the public eye of late through the case of Dr. Blazer and his idiot daughter.

If the case were that of one of the lower animals, there would be little difference of opinion—we would put the creature "out of its misery" and feel that we had committed a kindly act.

The action of the judge in dismissing the case seems to be the only sound and logical one. To have permitted the jury to acquit him would have been to give official sanction to such a proceeding, which, at the present stage of our evolution, seems to us to be unwise. If the jury had found him guilty it would, under the circumstances, have been a shock to some convictions as to right and justice which lie hidden deep within the breasts of most of us but seldom or never see the light of day.

The judge was wise. No human tribunal is at present competent to settle such questions as this. That we turn from their settlement with something of a feeling of horror does not keep them from arising in the life of every physician, and when they do arise he must meet them in the pure sincerity of his own motives, the light of his conscience and the strength of his own soul—and having met them he must *hold his peace* and make his own settlement with his Maker, without the support or assistance of any other person whatever.

Do not lace your boots in a melon-field or adjust your hat under a plum-tree if you would avoid suspicion.—Chinese Proverb.

CHRISTMAS, INSIDE AND OUT

There are some who view this season of the year with a certain degree of anxiety or even dread; such are the ones who have made no plans or preparations ahead of time and are now scrambling around in a mad rush to obtain remembrances for their various friends and relatives—usually choosing the wrong thing in their hurry and excitement—and wondering with some forebodings, how long it will take them to pay the bills they are running up. These people get no very hearty enjoyment out of the Christmas season.

There are others who look forward to the Holidays with keen zest and welcome this joyous season; these are they who, from time to time through the year, when they saw something which was especially appropriate for some dear one whom they wished to remember, have purchased it and laid it away, or who have, in their spare moments, been making little gifts with their hands. They have also been making deposits in a "Christmas Club," and now have a fund sufficient to defray the expenses of the celebration to which we are all entitled at this season, so that they can start the New Year with a clean slate and a clear con-

science. These people will indeed have a Merry Christmas.

In either case, it will be well if we begin, at once, to limber up the joints of our souls so that we may be able to enter into the festivities with the greatest degree of participative enjoyment. Get your thinking apparatus to moving in the right direction, now. Look up some folks who need some of the good things you are able to give them or do for them, and who can do nothing for you in return. You do not get to the nub of the Christmas spirit when you give only to those who are able and likely to give something to you.

By all means enter into the external and visible gayeties of Christmas as fully and completely as you are able, but, in doing so, do not forget that the festival is symbolic. To us who are Christians it symbolizes the birth of our great Master, who came to proclaim, "Peace on Earth to men of Goodwill." To the people of other lands, other races and other religions, mid-December has been a time of rejoicing and festivity since the dawn of history, for it is the true beginning of the New Year—the time when the sun, having reached its point of greatest distance from us, turns back in our direction again, so that the hope of budding leaves and violets; of seed time and harvest, is born anew for us.

So this is a time to ponder for a moment, with joy and thanksgiving, upon the beneficence of the Creator who so orders the universe that we may live in secure certainty of what will befall, and to study the teachings of Him who said, "Do unto others as ye would that they should do unto you"—not as you expect they are going to do to you.

Fill this happy time with merriment and rejoicing, but do not forget to have a sound foundation of inner joy as a basis for the outer manifestations; so shall you truly and certainly have a Very Merry Christmas.

Learning without wisdom is a load of books on an ass's back.—Japanese Proverb.

VERATRUM

Of the veratrum group, it is probable that *Veratrum viride* is better known to the medical profession than any other, though veratrine which now is widely used is not present in any great amount in this plant, but is chiefly obtained from *Aaargæa officinalis*.

Veratrum viride, also called swamp hellebore or poke root—though it is entirely different from *phytolacca* which furnishes the poke root of the U.S.P.—is an American plant and has long been used in medicine for depressing the circulation and the nervous system. It should be used only in the form of the tincture, as the fluidextract (known, also, as "Norwood's tincture") is no longer official. Its therapeutic uses and effects are so closely similar to those of veratrine that the two may profitably be considered together.

Veratrum contains quite a number of alkaloids, which are almost never used alone, its effect being due to its total alkaloidal content.

Physiologically, small doses cause a diminution in the force of the pulse, without, at first, affecting its frequency; afterward the pulse becomes slow, soft, moderately full and liable, if the patient makes any sudden exertion, to become rapid, small or even imperceptible.

Houghton and the younger Wood believe that the slowing of the pulse is due to stimulation of the vagus, and that the primary fall of blood pressure may be due to this slowing; but the dominant effect of full doses is a fall of blood pressure, due to depression of the vasomotor system.

The local effects of veratrum, and especially of veratrine, are exceedingly irritant to the mucous membranes and skin and cause a marked lowering of sensibility in the sensory nerve endings.

The first of these effects results in its acting as a powerful irritant emetic and purge when given in large doses by mouth, and this probably accounts for the fact that, although veratrum and its alkaloids are very powerful poisons, fatal results from their administration are rare, because they are promptly rejected by the stomach. The emesis is also assisted by central nervous action.

The effect upon the sensory nerve endings is the basis of the use of veratrine ointment, locally, in the treatment of neuralgia, herpes zoster, muscular rheumatism, rheumatic joints, gout and other maladies of the same class. In this connection, it should be remembered that veratrine is quite readily absorbed by the skin, especially if there are breaks in its surface, so that cases of dangerous poisoning may arise if the ointment is used injudiciously. Its irritant effect may give rise to skin eruptions, and, if any of it enters the eye, it produces a

severe and intractable conjunctivitis. The official ointment is too strong for ordinary use and should be diluted with at least equal parts of some excipient, such as lanoline.

After poisonous doses, which are not rejected, the pulse gradually becomes slow and irregular; the breathing slow and labored; the pupils dilate; fibrillary contractions of the muscles and severe *tetanic* convulsions occur. The end is collapse, unconsciousness and death by *respiratory* failure.

The *chemical antidotes* are tannic acid, iodine and potassium iodide; the physiological antidotes, stimulants (such as strychnine), caffeine or coffee, heat and absolute rest.

In large therapeutic doses, veratrum increases the excretion of urine and saliva; increases reflex excitability; lessens oxidation somewhat; causes a sensation of numbness and tingling in the fingers, toes and joints and sometimes over the entire skin surface. It almost invariably causes a prompt and decided fall of temperature.

The internal administration of veratrum is practiced in a number of conditions, and those clinicians who have used the drug most widely and *thoughtfully* are loudest in its praise, although the pharmacologists of the laboratory are still arguing about its composition and therapeutic usefulness.

Many practitioners strongly recommend its use in the treatment of *puerperal eclampsia* and uremic convulsions. In such cases, it should be given boldly. Veratrine, in doses of 1/12 grain in dilute alcohol, or a special preparation known as Veratrone, in 10 to 15 minim doses, should be given hypodermically at once, and smaller doses repeated at intervals, with great care, as conditions warrant, until the pulse rate becomes normal.

Its greatest field of usefulness is in acute maladies attended by fever and inflammation, with high arterial tension, a bounding pulse and a flushed face, such as typhoid, the exanthemata, acute rheumatism, and, especially in *pneumonia*. In such cases, veratrine, in doses of 1/120 grain (or the tincture, 2 to 5 minims), should be given every 15 to 30 minutes until a faint intimation of nausea is produced—the patient being kept absolutely quiet, meantime; the drug should then be withheld until the nausea ceases or the symptoms again call for its administration. If the antipyretic is still needed and the stomach rebels, small

doses of codeine (1/12 grain) may be administered with a few doses of the veratrine.

For reducing a tumultuous condition of the circulatory system, by "bleeding the patient into his own vessels", veratrine is second only to phlebotomy—which can be safely used only in especially robust and plethoric patients—and possesses this distinct advantage; that it relieves the untoward symptoms promptly and effectively and at the same time unlocks all the avenues of excretion, thus providing for its own rapid elimination, along with the toxins which are present in the system.

Veratrum is *contraindicated* in all conditions of depression and exhaustion and in gastritis. In typhoid, it should be used only in cases of hyperpyrexia with active delirium. In pneumonia, it is useless after fibrinous deposits have occurred.

In veratrum and veratrine (the latter being more readily portable, for emergencies, and more satisfactory in many ways) we have a drug which should be the first thought in the *beginning* of almost all acute, active fevers and which, if given with forethought and precision, will be attended by only the happiest results, as regards both patient and physician.

He who is wedded to tradition has turned his mind against progress.—Dr. A. B. Jamison.

WHEN WORK IS SLACK

There are times when most of us feel that we would like to change places with one of the fellows whose waiting-room is always full of patients and who is so busy that he scarcely has time to eat or sleep. Perhaps, if we could stand in the shoes of these terribly busy men, for a week or two, we might discover that they are not the happiest people on earth.

The young man who is just starting his practice finds that it is often a long time between—patients; the older practitioner sees days or weeks when his community seems to be distressingly healthy. How do we fill these vacant hours?—not the hours we need for recreation but the hours when we should be working.

There used to be doctors—they were rare, thank heaven!—who put in their idle hours in billiard rooms and places of that character. Not that there is any harm in billiards—it is a good game for recreation but a poor way to kill time. There still are some, however, who, between patients, play soli-

taire, gossip or read trash; and there are more who spend such time in only slightly less unprofitable occupations. What, then, can the temporarily unoccupied physician do with profit in such hours?

In the first place, there are two kinds of profit, so the brokers and financial experts tell us: long-swing investments, where the investor realizes his returns only at the end of several months, or perhaps years; and short-time investments, where he draws down his profits (if any) every few days. For the physician, these are represented by investments of time which will result in making him a better doctor, and thus, after a time, permit him to collect more and larger fees for services which he has made *more valuable* to his patients; and those professional or semi-professional occupations, not involving the handling of people who are ill, which will bring in a direct cash return.

In the former class fall all lines of professional study which will add to a man's store of information or to his technical skill or both. The hours when no patients appear are splendid chances for reviewing anatomy and physiology—most of us *badly need* a review of these basic and necessary sciences—for going deeply into some good textbooks on diagnosis and therapeutics; for brushing up and perfecting one's technic in blood counting, uranalysis or some other laboratory or surgical procedure; or for reading some of those books, not strictly professional, such as the biographies of Osler and Pasteur or some of the new and surprising discoveries in physics and chemistry or such thought-provoking books as Haldane's "Dædalus," which will make us not only broader and more capable physicians but more adequate human beings.

In this classification falls, also, the writing of technical articles for the medical journals. Such work not only conduces to careful observation and logical thinking and to the clarification of one's knowledge of many things, but also adds materially to his professional prestige and makes his name known outside of his community. These things help greatly on the long swing.

For the short turns, giving quick financial results, life insurance examinations help out. By giving well-considered and impersonal talks and lectures in the schools, clubs, Y.M.C.A., etc., a sentiment in favor of periodical physical surveys of the apparently healthy and of typhoid vaccination

can be developed, which will result in filling many otherwise idle hours with profitable occupation.

There is scarcely a community, today, which has not some form of industrial institution, and careful thought will show you how you can be useful to these—to your own profit. You might, for instance, work up the business of making periodical examinations of the food handlers in restaurants, dairies, butcher shops, etc., to detect typhoid carriers. You might also arrange to do laboratory work for such of the other doctors in your community as do not care to do this for themselves.

There are said to be 88 ways to make money by writing. Brief, pointed and practical articles on various phases of child welfare and personal and domestic hygiene, if written with *full knowledge* of the subject and in an attractive style, may frequently be sold to the household and health magazine. Articles on rural hygiene and the farmer's sanitary and health problems are acceptable to the farm journals. The prices paid are not very high but—"every little bit helps," and if once you can acquire the knack of a clear, pleasing and forceful literary style you are on the way to many of the good things of life.

In the city, various other opportunities are open, such as giving instruction in schools at certain hours; reading proof for medical authors; tutoring backward students; making lantern slides or drawings to illustrate lectures or articles; and many other matters which a thoughtful man can discover.

In the ultimate analysis, the place which a man will fill, in his profession and in his community, depends not only upon how he works during his working hours but upon *how he spends his leisure moments*.

Everything is waiting and watching you to see what signal you hoist from within—you attract that which you desire to attract.—Elbert Hubbard.

THE DOCTOR HAS HEALTH FOR SALE

In years gone by the doctor was almost as impressive a sign-post of pain, disease and death as was the undertaker. People dreaded to see him come into their homes and dreaded to go to his office and, as soon as the acute ache or illness of the moment was relieved, were glad to see him go and to forget him and their need for his services. Too much of these conditions remains today.

No man enjoys remembering unpleasant things. He instinctively (and very properly) turns his mind to the contemplation of stimulating and joyous experiences. Is it strange that he should tend to forget the doctor while he is trying to forget the suffering of his recent illness?

The advertising man (we do not mean the "quack" who lauds his own skill in the public prints, but the man who is engaged in the profession of advertising) knows that if you have something to sell you must make people want it before they will buy. It is his business to find out what are the most appealing features of the products his clients have for sale and then make those so attractive that people will stand in line awaiting their turns.

Sickness and death have no particular popular appeal. One does not apply to the undertaker ("mortician" seems to be a more popular word, just now) until his services are absolutely required; and no amount of salesmanship would render a bargain-sale of coffins at all widely popular. Some doctors enjoy about the same type of popularity as the gentlemen to whom we have just alluded.

The laws of medical ethics forbid a physician to advertise his personal skill or knowledge in the newspapers and magazines, but we can see no harm in impersonal advertising for educational purposes, as well as for selling purposes.

Let us look over the doctor's stock and see what he had best present to his "customers".

His first commodity (that is, the one that most of you will think of first) is professional knowledge and skill for the alleviation of pain and illness and for the postponement of death. Medical ethics, however, forbids him to exploit these to prospective patients; and even if this were not true popular imagination turns with distaste or even loathing from the thought of pain, illness and death.

He has, also, a knowledge of hygiene and sanitation and all the various measures by which a man or a community can *keep well*. Now here is something that interests everyone. Health is mankind's most prized possession, for without it all the other pleasures of life lose their zest and flavor.

While physicians differ in the extent of their knowledge of these matters and in their ability to apply that knowledge, they

all have it to a considerable extent and can add to and develop it readily.

The only way we can treat disease in its incipency, or even before it starts, is by examining our patients at periodical intervals, and making a *real job* of such examinations. The only way we can convince them of the necessity of such examinations is by educating them concerning the supreme value of health and the possibility of maintaining it by a proper hygienic life and a reasonable (not a morbid or pathological) interest in the condition of their bodies.

If your stock of knowledge and technic in the lines of general hygiene and physical diagnosis is low or out of date, get in some new goods so as to be ready for business, and then advertise the fact that you have *health for sale*.

If you use paid publicity, it *must* be impersonal and *should* be a cooperative proposition. The County Medical Society could properly run ads. in the local papers calling attention to the priceless commodity which *all* the physicians in the county have for sale. No name should be signed to this—or the name of *every* member of the society should appear. It might be well to casually state that this is no money-making scheme, for, the more people buy this health service the less work will the doctors have in caring for the sick.

Equip yourself to make this a real and valuable service and charge fees in proportion to its value and your effort. People *ought* to be more willing to pay for being *kept* well than for being *made* well. Their condition of health would be a pleasant thing to remember.

This may sound academic and visionary, but the time is coming—and it is not so far away, we believe—when this educational health service will be the most important part of the work of physicians.

Be prepared; be happy and *look* so; forget disease as much as you can and encourage your patients to do the same. Have health for sale and boost it as a good salesman should. So shall your days be long in the land and, verily, you shall prosper.

Whenever you want results let your soul live in accord with what you want; if you want love, live lovingly; if you want health, live healthily; if you want peace, live peacefully, if you want abundance, live abundantly!—Brown Landone.

Truth conquers by itself; prejudice by appealing to externals.—Epictetus.

THE CHRISTMAS SEALS

Tuberculosis Christmas seals are again for sale on the candy counters, cigar stands and hotel desks of the country. Millions of them, too, are pouring into our homes by mail, with the request that we purchase the little stickers and so further strengthen the campaign against one of the world's greatest scourges.

This year, the Christmas seal becomes of age. It is just 21 years since an obscure postal clerk in Denmark conceived the idea of a decorative stamp to be placed on Christmas mail as a means of raising funds for a hospital for tuberculous children. A few years later the first Christmas seals that were sold in the United States raised \$3,000 for the purchase of a sanatorium site in Delaware. Last year, 1,250,000,000 seals were printed for the National Tuberculosis Association and their sale brought approximately \$4,500,000 into the coffers of the 1500 organizations affiliated with the national body.

During these years the Christmas seal has helped to finance hundreds of local, state and national campaigns to secure hospitals, sanatoria, clinics and dispensaries. At

least 20,000 public health nurses are at work in the schools and homes to educate children and parents in the rules of healthful living. In this way minor physical defects are detected and, because of early treatment, a physical breakdown in later life with tuberculosis or some other serious disease is often prevented. Every large city, nowadays, has its open-air schools, preventoria and nutrition classes where the children of tuberculous parents and others below par are brought to normal weight and strength. Approximately 3,000 such institutions are in this country at present. The Christmas seal has made possible the Modern Health Crusade, the largest child health movement in the world, through which 8,000,000 school children have been taught daily habits of cleanliness, diet, exercise and rest so that they may develop into robust men and women.

Our participation in the annual Christmas seal sale is an investment in individual and community health. More than that, we become a part of the message of hope which the seal carries to the many thousands who otherwise become victims of a preventable and curable disease. In all truth, the mission of the Christmas seal is joyous health.



Leading Articles

Lobar Pneumonia

By CLARENCE L. WHEATON, M.D., Chicago, Illinois

Superintendent of Tuberculosis Dispensaries Medical Service, Chicago

THE importance of pneumonia arises from the fact that it respects neither persons nor places; it attacks the young and the old, rich and the poor alike; those who are apparently well and those apparently weak. Wilson¹ tells us that governmental statistics show that pneumonia of all types is responsible for 152 out of every 100,000 deaths in the United States, and that, while lobar pneumonia has decreased its mortality in the twenty years ending with 1920, the death-rate of bronchopneumonia is still increasing.

Lobar pneumonia is a diffuse inflammation of one or more lobes of the lung; it is more frequent, seemingly, in children than in adults; but when it attacks the adult it is more fatal than in the case of the child. Bundesen² has recently given the following figures showing the relative mortality of lobar and bronchopneumonia in the young and in the old:

Relative Death-Rate from Broncho- and Lobar Pneumonia

	In persons under 5 yrs.	In persons over 50 yrs.
Broncho- Pneumonia	23.8	3.85
Lobar Pneumonia	7.6	14.58

In the young lobar pneumonia is a self-limiting disease which quickly comes to a crisis and resolves.

Although the etiology of this widely prevalent disease is not definitely known, it seems very probable that the condition of the general bodily resistance, as well as the presence of any disease in the lungs, plays a considerable part in its development and evolution.

Etiology

The causal role in pneumonia has been assigned to the diplococcus pneumoniae, but pneumonia may be due to other organisms, and in such cases is more fatal than that due to the pneumococcus. It should be pos-

sible to make a classification of the pneumonias other than lobar and broncho; i. e., based on the causative organisms, pneumococcus, streptococcus, staphylococcus or mixed. Such a classification would be more strictly etiological. Different methods of determining the type of pneumococcus in the sputum in lobar pneumonia have been described in the literature. Krumwiede's method³ of direct precipitin tests on an extract of the coagulated sputum, according to Kohn's very recent report,⁴ gives excellent results. Lobar pneumonia is due to the pneumococcus, while influenzal pneumonia is considered due to the streptococcus hemolyticus, and terminal pneumonias to organisms causing some special type of infection, more usually the staphylococcus.

Of the pneumococcus group there are four well-known varieties, each having distinct serologic qualities. These are known as Types I, II, III and IV. The first three types account for nearly 80 percent of lobar pneumonia. Types I and II are frequent in the mouths of pneumonia patients but not in the mouths of the healthy, except in persons in contact with pneumonia cases. But Types III and IV are found in the mouths of the healthy. Pneumococcic infection can be produced in animals only by injection of the cocci into the trachea and bronchi; the infection is, therefore, undoubtedly, air-borne and pneumonia should be considered as a contagious disease. The disease is usually transmitted to the victim from an external carrier of some of the virulent types of pneumococcus, at a time when his resistance is low. Hence the disease is more prevalent in severe, inclement weather; in the presence of epidemics; or, in individual cases, after an operative or other trauma or following an illness. The degree to which the resistance is depressed and the degree of virulence of the acquired organisms determine the severity of the attack. One or both lungs may be affected.

The development of pneumonia following a surgical operation is one of its most-feared complications. The mortality of post-operative pneumonia, according to Riesman,⁵ is over 14 percent. Kolondy⁶ remarks that the site of operation is more of a contributing factor than the length of the operation itself, or the effects of a general anesthetic. The incidence of a pneumonia is far greater after a laparotomy through the upper than after one made through the lower abdomen. Pain in the first case causes the patient to abandon the abdominal type of respiration. Elwyn⁷ thinks that following abdominal operations, small or large, areas of atelectasis or collapse occur in the lungs, especially in the lower lobes. It is not known how these occur, but it is possibly due to closure of all bronchioles in a certain area by reflexes acting through the vagus.

It is also probable that infection of the lungs may be due to aspiration from sepsis in other regions; or there may be a lymphatic or blood infection through the right half of the diaphragm, leading first to pleurisy and then to pneumonia. No doubt, loss of heat and of blood during an operation and the nervous exhaustion due to visceral traumatism play their part in diminishing the resistance to infection.

Symptoms and Diagnosis

Lobar pneumonia in the adult gives a very characteristic clinical picture which can scarcely be confounded with anything else. The disease is usually ushered in with a severe chill and the temperature mounts to 104° or 105° F.; the eyes are bright, the face flushed, the expression anxious and the breathing rapid; the pulse is at first full; there usually are some short, frequent coughs and the expectoration soon becomes blood-tinged; pain is an early symptom, within the first 24 hours, and is referred to the region of the nipple or lower axilla of the affected side, but it may be referred to the abdomen and on this account pneumonia has occasionally been mistaken for appendicitis.

The pathological characteristics of lobar pneumonia are inflammatory engorgement, with anoxemia and bacteremia or toxemia of varying intensity, accompanied by fever which usually terminates by a crisis. This crisis may occur at any time from the third to twelfth day as an abrupt drop in the temperature to 96° or 97° F., followed by sweating and sleep.

The physical examination of pneumonia patients shows lack of expansion of the lung on the affected side, vocal fremitus more distinct than normal, and a varying percussion note. In the stage of lung engorgement, the note is high and tympanitic; in the hepatization stage the note is dull or flat; during resolution the note again returns to the tympanitic type.

The breath sounds may vary from finely crepitant to large mucous rales. Riesman⁸ says that the sign of suppressed breathing is present very early in lobar pneumonia.

The urine, as a rule, shows the signs of a toxic nephritis with albumin, tube casts and blood.

Some writers have claimed that the x-ray is valuable in the diagnosis of lobar pneumonia, but Paiseau and Iser-Solomon⁹ show that while the x-ray findings are valuable in supporting clinical findings they cannot be depended on alone for diagnosis, as the same shadows may arise from tuberculosis, infarct, bronchopneumonia and pleurisy.

Jeanette Harrison¹⁰ has recently reported that in lobar pneumonia in children there is a considerable shortening of the disappearance time of intradermically injected salt solution, and considers this a means of diagnosis.

I have mentioned the fact that in pneumonia pain may occasionally be referred to the abdomen and the case considered as one of appendicitis. This is especially so in children. There may be but few other clinical symptoms, but chill, temperature and a high leucocyte count should cause investigation. When abdominal pain occurs in the adult the pneumonia may be mistaken for appendicitis, gall-stone disease, or perforated ulcer.

Deficient aeration of the blood, owing to consolidation of the lung, produces cyanosis, with rapid and shallow respiration, and marks the onset of circulatory disturbance.

Evolution and Prognosis

No definite rules concerning the prognosis of lobar pneumonia can be laid down. Each case is governed by its own conditions.

In children, lobar pneumonia usually runs a fairly benign course; but in adults the result will depend especially on the patient's powers of resistance, on the state of his lungs, on the virulence of the infecting organism, and most particularly on the effects of the bacteremia or toxemia on the cardiovascular system.

The more virulent organisms create a bacteremia in all fatal cases. With non-virulent strains there is usually neither bacteremia nor mortality. The very great majority of patients showing a negative blood count for cocci will recover.

It is a questionable matter whether toxemia in pneumonia is due to the bacterial end-products or to changed metabolism. Haden¹ has shown that the chemical examination of the blood in lobar pneumonia displays low chlorides with high proteins and urea nitrogen. There is apparently generalized protein destruction. But, whether the cause be toxic protein end-products or bacterial toxins, or carbon dioxide poisoning from insufficient aeration of the blood, the result is a crippling of the heart's action and the toxemia may be fatal.

It is supposed that the crisis represents a time when the organisms in the system or the toxins arising from them are neutralized by the development of the patient's own defensive antibodies.

If the patient's resistance to the localized infective process is low, a pleuritic effusion or an empyema may develop.

The prognosis in any given case will depend on the evidence which the patient furnishes as to what way his struggle with the infecting organism is tending. Thus, a leucocytosis of from 18,000 to 25,000 with modifications of other symptoms, is a favorable sign; while a leucocytosis below 12,000 or above 50,000 is unfavorable; a sudden fall of temperature with air hunger and a continuously rapid and weak pulse without a true crisis is unfavorable; also a lowering systolic blood pressure is a symptom to be dreaded. According to Levi², the signs of cardiovascular failure are increasing cyanosis; weakening of the second pulmonary sound; slight venous stasis in neck vessels; edema of the lung base, or a fall in the blood pressure. As Davis remarks³, the fall in pulse pressure may be brought about either by a rise in the diastolic pressure, the systolic remaining the same, or by a fall in the systolic, the diastolic remaining the same. Variations in the blood pressure cannot, according to many observers, be relied upon to any extent in regard to the prognosis of pneumonia.

Treatment

The treatment of lobar pneumonia may be both specific and symptomatic.

The only successes with specific therapy obtained, to any extent, up to the present time, have been in Type I pneumonias, which comprise only about one-third of the total. Type I anti-pneumococcic serum is stated by McLaughlin⁴ and others to have a beneficial effect on pneumonia caused by other types of pneumococci. It should be applied before the third day. Etienne and Braum⁵ report good results in 24 cases with subcutaneous injection of polyvalent serum. Others, however, report no favorable results.

As regards vaccines, extensive experiments were carried out in British India by King⁶ to test the value of prophylactic inoculations. Types I and II vaccination afforded no protection against the incidence of pneumonia; in treatment, vaccines appear to have no beneficial effects.

Several reports have appeared in recent literature in regard to the use of pneumococcic antibody solution which was first prepared by Huntoon⁷ and consists of an aqueous extract of the active immune substance from anti-pneumococcic serum with a minute quantity of pneumococcic antigen. In Type I pneumonia, Cecil & Larsen⁸ reported a death rate of 13.3 percent in the treated as against 22.2 percent in those not treated. Good, but not so striking, results were obtained also with pneumonias from other types of pneumococcus. Connor⁹ also reported excellent results at the Bellevue and New York Hospitals from pneumococcic antibody solution used intravenously. Cecil and Baldwin¹⁰ injected this substance subcutaneously but did not obtain such good results as with the intravenous injections, which was verified by the findings of Oliver and Stoller¹¹, who found only 4 cases out of 23 benefited.

Pritchard¹² reports excellent results in 56 cases of lobar pneumonia from the use of Rosenow's antigen. This writer says, "I would almost as soon care for diphtheria without diphtheria antitoxin as to be responsible for pneumonia without pneumococcic antigen".

Oxygen treatment seems logical to combat anoxemia. The difficulty in this has been to find a method of home administration; but Gruedel¹³ states that the methods of supply and administration have been much improved. Lundsgaard¹⁴ reported that, in Denmark, in about 60 percent of 40 cases, treated by oxygen inhalations, the oxygen content of the blood was brought up to normal with disappearance of dyspnea.

Snow²⁴ recommends diathermy as an adjunct to other methods to increase phagocytosis and improve local metabolism.

The value of drugs in the treatment of pneumonia is a debatable matter. In my opinion, drugs should be used only when strictly indicated by the symptoms and never as a matter of routine. The great desideratum in pneumonia is to help the patient in the fight which he himself is waging by developing his antibodies and strengthening his resistance against the enemy; and for this the cardiovascular system must be reinforced if symptoms of weakening appear. Hence in many cases digitalis will be indicated. Similarly for intense pain morphine may be indicated. But I wish to emphasize that no drug should be employed unless there is a definite reason for it and a definite purpose to be attained.

The great clinical weapons against lobar pneumonia still remain our chief resource; viz., good nursing and good hygiene, including rest and sleep. Give the patient plenty of water to help his eliminations. Keep his mind cheerful and avoid manipulations. If he develops symptoms treat them, but do not anticipate them. The use of such drugs as optochin, mercurochrome, quinine, etc., should be avoided until more definite and accurate information regarding their action and value in this disease is known; and the same may be said of vaccines and serums which are still in the experimental stage. Although, occasionally, brilliant results in a small series of cases may be reported, as in the case of mercurochrome in the pneumonias of children by Freeman and Hoppe²⁵, yet this does not warrant us in departing from the orthodox and proved methods of pneumonia therapy. In this disease, in the present state of knowledge, the physician must be content with his role of an assistant to Nature.

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WHY IS IT that when you call a plumber, carpenter or other skilled mechanic to do work in an emergency on Sunday, a holiday or after hours, he charges double time, while when you call the average family doctor at unseemly hours, he rarely asks, and seldom gets, a nickel more than ordinary fees.—Reed & Carnrick.

X-Ray Diagnosis of Lobar Pneumonia*

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IN NO special branch of medicine has x-ray been of greater aid than in the diagnosis of chest conditions. The more chronic type of infections were first to command the attention of radiologists. In recent years, the development of instantaneous bedside technic for chest films has opened up the realm of acute diseases of the chest.

The study of lobar pneumonia by serial radiographic examination, films taken at daily intervals during the disease, has given us an opportunity to observe, from day to day, the course of the disease and has added much to our knowledge of its pathology. From such observations we have found that, as a general rule, lobar pneumonia starts as a consolidation in the hilum region and spreads very rapidly to involve one or more lobes. Complete consolidation is nearly always present within twenty-four hours after the onset of the disease. This is the prevailing method of invasion of the pneumonic process in adults. (Fig. 1).

In children, however, a different type of involvement is frequently encountered. The consolidation, in place of starting in the hilum region, makes its first appearance in the periphery of the lung; the shadow is wedge-shaped, base at the periphery, apex toward the hilum. Usually, only a small segment of the lobe is involved at the outstart. This becomes larger and extends inward toward the hilum region until complete lobar consolidation is obtained. (Fig. 2). Mason has observed that, until such peripheral consolidations have spread to reach the larger bronchi at the hilum, physical signs of consolidation are lacking, an observation which serves to explain the difficulty often encountered in the diagnosis of pneumonia in children. Either type of involvement may occur in adults or children; the infantile type is encountered only very rarely in adults, however.

The consolidation of lobar pneumonia is homogeneous in character, since it is produced by an exudate pouring out into the air sacs, not by actual lung destruction and cell infiltration as is the usual defense reaction to infection. It is completely confined to

one or more lobes and, consequently, produces a characteristic shadow on the x-ray film. Centering the x-ray tube at the fifth dorsal vertebra, with the customary chest technic, the divergent rays fall across the lower border of the upper lobe. The consolidated tissue traversed is uniform in its density and fairly uniform in its thickness throughout, and ends abruptly with a straight line lower border (Fig. 3a).

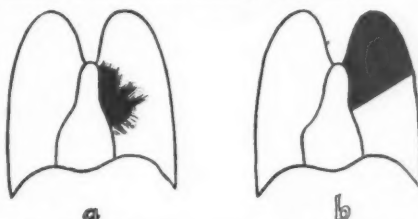


Fig. 1. Adult type of onset of lobar pneumonia.
(a) Consolidation starts in the hilum region.
(b) Within twenty-four hours it spreads to involve an entire lobe.

Middle lobe consolidation presents a wedge-shaped structure, thick above and thin below. The resulting shadow in the x-ray film is small, extending from the hilum to the periphery, in the mid-portion of the chest, with a greater density above and a straight line upper border; the lower border is not well defined and the shadow feathers out into normal lung density (Fig. 3b).

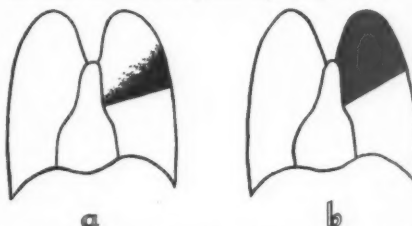


Fig. 2. Infantile type of onset of lobar pneumonia.
(a) Consolidation starts at the periphery of the lung, forming a triangular shadow; base at the periphery, apex toward axilla. At this stage physical signs of consolidation can not be elicited.
(b) Within twenty-four to forty-eight hours it spreads to involve an entire lobe.

Lower lobe consolidation presents a much larger shadow, occupying the lower two-thirds of the chest, densest in its mid-portion and feathering out into normal lung density both above and below. The lowermost portion, the costophrenic angle, is last to be consolidated and often remains aerated

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throughout the course of the disease (Fig 3c).

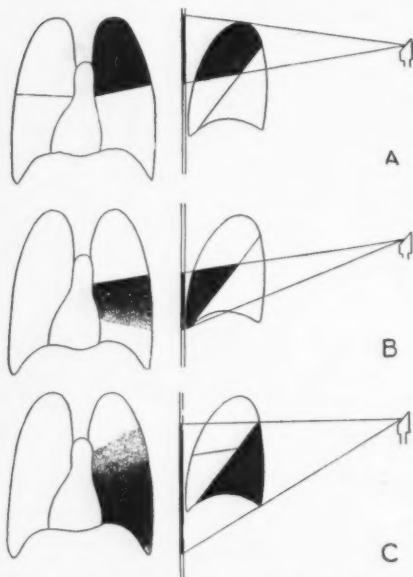


Fig. 3. Shadows cast by consolidation of different lobes with usual chest technic, centering at 5th dorsal vertebra.

(a) Upper lobe consolidation shows dense homogeneous consolidation of upper portion of chest with a straight-line lower border.

(b) Middle lobe consolidation shows a small shadow extending from the hilum region to the periphery, densest above, having a straight-line upper border and feathering out into normal lung density below.

(c) Lower lobe consolidation shows a large shadow covering fully lower two-thirds of the lung field—densest in its mid-portion—showing a hazy upper and hazy lower border where consolidation is complete. The costophrenic angle is last to become consolidated and often remains areated throughout the course of the disease.

During the course of the disease, there is little change in the character of the consolidation. Even with crisis there is no demonstrable change.

FIG. 4



Fig. 4. The periphery of the consolidation is the first to clear. The accentuated peribronchial markings become more prominent; these are the last evidence of infection to disappear.

The accentuation of the peribronchial markings is the

last abnormal condition to disappear (Fig. 4).

If three weeks pass after crisis without evidence of progressive favorable resolution, you may be sure that you are dealing with a complication. If the shadow remaining is central, it is due to lung abscess whether you can see the abscess cavity or not (Fig. 5a). The cavity itself when filled with pus

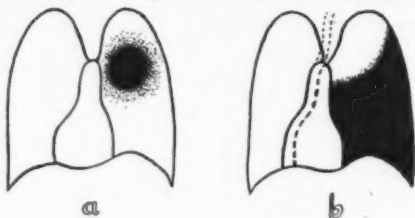


Fig. 5. If, three weeks after crisis, there is not evidence of progressive favorable resolution, you may be sure you are dealing with a complication.

If the remaining shadow is central, it is due to an abscess whether you can see the cavity or not. If the remaining shadow is peripheral, it is due to a collection of pleural effusion in the general pleural cavity or localized.

(a) Abscess of lung, note central location and rounded margins of the consolidation.

(b) Fluid in general pleural cavity, note curved hazy upper border, obscuring of costophrenic angle and displacement of the mediastinal structures.

is usually indistinguishable, since the surrounding consolidation is of almost the same density. Care must be taken to ascertain that the shadow is really central, not a localized collection of fluid at the anterior or posterior chest wall which merely appears to be central in the anterior plate. This can be readily shown by lateral radiography. Abscess formation following lobar pneumonia is usually of the single, large type. Occasionally, they are multiple and very small. Where the extent of lung infection by such minute abscess formation is small, a favorable outcome can often be expected, the body being able to absorb the pus and fill in the destroyed areas with fibrous tissue. Where the process is at all extensive, however, it is likely to lead to fibrosis with organization and scar tissue formation. A chronic interstitial pneumonia may result with numerous small abscesses surrounded by thick scar tissue deposits. This is manifested in the x-ray film by narrowing of this side of the chest, retraction of the trachea and mediastinum, elevation of the diaphragm and narrowing of the interspaces.

If the shadow remaining after crisis is peripheral, the condition is probably due to pleural effusion. If the fluid is free in the general cavity (Fig. 5b), the shadow is densest in the lowest portion of the lung

(costophrenic angle) and the upper border is hazy and extends in a curved line concave upward and outward from the hilum to the axilla. If the fluid is localized, its margin is rounded with convexity inward. If the localized effusion is unassociated with plastic fibrinous pleurisy, the margin of the shadow is sharply outlined (Fig. 5c); if it is associated with plastic pleurisy, the margin is ragged and irregular (Fig. 5d).

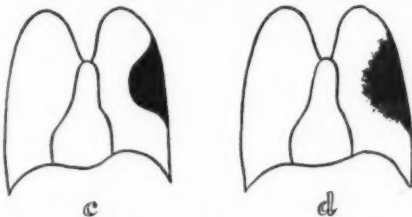


Fig. 5.

(c) Localized pleural effusion unassociated with plastic fibrinous pleurisy; note smooth border, rounded outline with base toward periphery.

(d) Localized pleural effusion associated with plastic fibrinous pleurisy; note ragged outline of the shadow.

In the differential diagnosis between lobar pneumonia and other lesions of the lung, a knowledge of the clinical history is essential in each case. From the x-ray film, the diagnosis can usually be narrowed down to two or three possibilities, but before the final diagnosis is made the history must be considered.

Upper Lobe Consolidations

Upper lobe lobar pneumonia must be differentiated from:

Acute caseous tuberculous pneumonia.

Primary tumor of the lung.

Primary tumor of the mediastinum.

Massive collapse of the lung from tumor of a bronchus or foreign body.

Localized effusion.

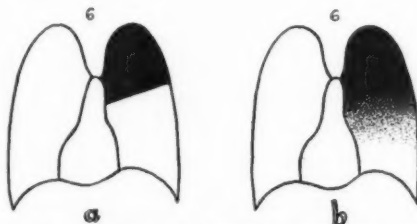


Fig. 6. Differential diagnosis from upper lobe lesions.

(a) Lobar pneumonia shows straight line lower border, homogeneous shadow; not distinguishable from caseous tuberculous pneumonia. Clinical course differentiates conditions.

(b) Primary tumor of lung, homogeneous shadow having no definite line of demarcation for lower border and feathering out into normal lung density below. No displacement of mediastinal structures.

Chronic interstitial pneumonia, involving the upper portion of the lung.

In lobar pneumonia, the shadow is homogeneous and dense and ends abruptly below by a straight line (Fig. 6a). Acute caseous tuberculous pneumonia presents exactly the same appearance and cannot be differentiated by the x-ray examination alone. The clinical history alone serves to differentiate the conditions. Lobar pneumonia should end by crisis in seven to nine days and be completely resolved within three weeks; while acute caseous tuberculous pneumonia shows no change for as many months. The presence of tubercle bacilli in the sputum clinches the diagnosis.

Primary tumors of the lung, beginning in the upper lobe, may present a homogeneous shadow, but the lower border is not abrupt, but feathers out into normal lung density. There are none of the clinical symptoms associated with lobar pneumonia and the condition progresses without regard to lobe formation (Fig. 6b).

Primary tumors of the mediastinum are homogeneous in appearance, but present a rounded, sharply-outlined outer border—base toward the mediastinum (Fig. 6c).

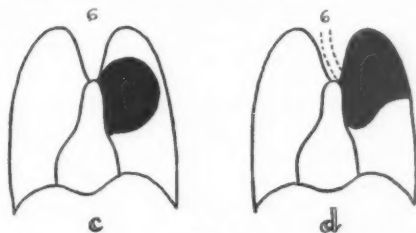


Fig. 6.

(c) Mediastinal new growth or aneurysm usually have rounded outer margins and spring from mediastinum. If under pressure, these may erode through ribs and cause displacement of the mediastinum to the opposite side.

(d) Massive collapse of the upper lobe from occlusion of the bronchus. "S" shaped lower border seems quite characteristic. The trachea may or may not be displaced.

Massive collapse of the upper lobe following tumor of the bronchus presents a sharply-outlined, "S" shaped, lower border. The inner portion of the line is convex downward, the outer portion concave upward. This type of shadow seems quite characteristic of this condition. There may or may not be retraction of the trachea to the involved side (Fig. 6d).

Localized pleural effusion of the upper chest present a homogeneous shadow with a rounded border, base toward the periphery of the lung or downward. Unless there is a very large collection of fluid, this should

hardly give any difficulty in diagnosis (Fig. 6e).

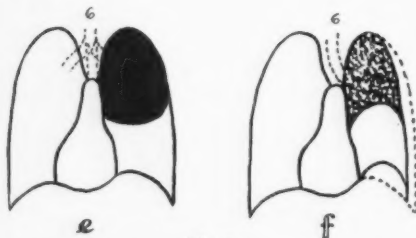


Fig. 6.

(e) Localized collections of fluid in the upper chest usually take on a rounded lower border. The trachea may be undisturbed; it may be pushed over to the opposite side by weight of fluid; or may be retracted toward the involved side if there is scar tissue retraction in the capsule.

(f) Chronic, interstitial pneumonia. Note small cavities, retraction of the trachea and elevation of the diaphragm.

In chronic interstitial pneumonia, the shadow is not homogeneous in character; it is irregular in density due to many small cavities, possibly bronchiectatic in character. The lower border is not well defined. There is a shallowness to the upper portion of the chest on this side, a narrowing of the interspaces, elevation of the diaphragm and retraction of the trachea to the involved side. The condition usually follows an acute inflammatory process, pneumonia, and is of long standing (Fig. 6f).

Middle Lobe Consolidations

Middle lobe consolidations must be differentiated from:

Localized interlobar effusions.

Localized effusions on the anterior and posterior chest walls.

Caseous tuberculous pneumonia, involving a small portion of the lower part of the upper lobe.

Lobar pneumonia of the middle lobe presents a small shadow extending from the

hilum region to the periphery, with a straight line upper border, densest above and feathering out into normal lung density below. The shadow is similar to that shown in caseous tuberculous pneumonia of this lobe and here as elsewhere is not distinguishable from the x-ray alone (Fig. 7a).

At times, lobar pneumonia in a child or acute caseous tuberculous pneumonia in an adult may involve the lower portion of the upper lobe. Such shadows can be differentiated from middle lobe pneumonia in that the hazy lower border of the middle lobe pneumonia is lacking, these conditions presenting sharply outlined lower borders. In the case of this type of shadow in a child from beginning pneumonia, in twenty-four hours this spreads to involve the entire lobe (Fig. 7b).

Localized interlobar effusions may be very difficult to differentiate from middle lobe consolidations. Usually, however, there is a definitely outlined lower border to the shadow and the peripheral end is more or less rounded, a slight thickening of the parietal pleura near the site of the involvement may present a clue as to the true nature of the condition (Fig. 7c).

Where the effusion is localized between the parietal and visceral pleura on the anterior or posterior chest wall, the condition may simulate a middle lobe consolidation in the anterior view of the chest, but examination in the lateral view reveals the rounded clearly outlined shadow in its true position (Fig. 7d & e).

Lower Lobe Consolidations

Lower lobe lobar pneumonia must be differentiated from:

Pleural effusion in the general pleural cavity.

A large collection of localized pleural effusion.



Fig. 7. Differential diagnosis from middle lobe lesions.

(a) The shadow of the middle-lobe lobar pneumonia can not be differentiated from caseous tuberculous pneumonia of this lobe.

(b) Consolidation of lower portion of upper lobe, either from infantile type of onset or upper-lobe lobar pneumonia or an incomplete consolidation of acute caseous tuberculous pneumonia differ from middle lobe consolidation in that they have a sharply outlined, straight-line lower border.

(c) Localized interlobar effusions usually have not only the sharply outlined upper border, but a sharply outlined lower border as well.

(d) Localized pleural effusion on the anterior or posterior chest wall may require lateral film examination (e) to determine the true condition.

Massive collapse of the entire lung.
Chronic diffuse interstitial fibrosis.
(Chronic interstitial pneumonia.)

The shadow produced by lower lobe lobar pneumonia is large and occupies the lower two-thirds of the chest. Both the upper and lower borders are poorly defined and fade off into normal lung density, the costophrenic angle is the last portion of the lung to become consolidated and often remains areated throughout the course of the disease (Fig. 8a). This often makes

from the weight of the fluid. This is very frequently the case with children, rarely with adults (Fig. 8b).

In massive collapse of an entire lung from atelectasis, the shadow is usually homogeneous. The space previously taken up by air must be filled in, in some manner, and it will be noted that there is narrowing of the interspaces, sinking in of the chest and elevation of the diaphragm. Tracheal retraction toward the involved side is almost always present (Fig. 8c).

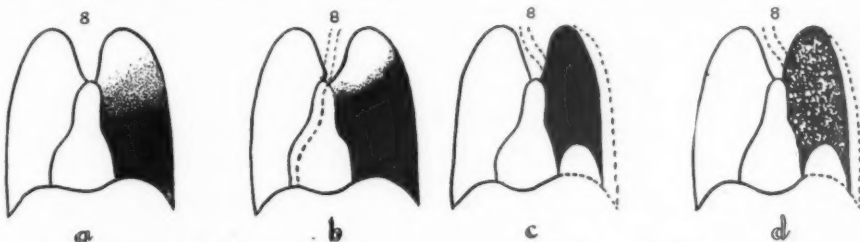


Fig. 8.

(a) Lower lobe consolidation from caseous tuberculous pneumonia can not be differentiated from lobar pneumonia. This type of tuberculosis rarely occurs in the lower lobe. Note areation of costophrenic angle.

(b) Fluid free in general pleural cavity obscuring costophrenic angle, curved upper border, displacement of the mediastinum, not always present.

Fig. 8.

(c) Massive collapse of the lung shows dense homogeneous shadow, with narrowing of the interspaces, elevation of diaphragm and retraction of trachea.

(d) Chronic diffuse fibrosis (chronic interstitial pneumonia), showing similar picture to massive collapse except in this instance there is associated cavity formation.

the differentiation of consolidation from effusion a rather simple matter since, in pleural effusions, free in the pleural cavity, the costophrenic angle is first to become obscured. When the collection of fluid is large, the shadow may simulate very closely that of consolidation. It assumes, usually, however, a curved upper border concave upward running from the hilum region to the axilla. The heart and mediastinal structures may be displaced to the opposite side

Chronic diffuse interstitial fibrosis (chronic interstitial pneumonia) may give almost the identical picture of massive collapse except that definite cavities can be seen in the midst of the consolidation, a condition not encountered in massive collapse. The history, alone, would differentiate this type of consolidation from lobar pneumonia and the fact that this type of fibrosis rarely limits itself to one lobe would be helpful in analysis of the condition present (Fig. 8d).

"TO BECOME proficient in the practice of medicine it is necessary to practice medicine. Useful information should not be discarded just because it is not popular with some physicians; it should be acquired and put to the test. When a physician is thus fortified he is in a position to defy criticism and to be strengthened in a knowledge that is fuller than it had been. He can look the whole world in the face, and not falter. His convictions are his strength; his misgivings would be his weakness. And it is only through conviction that he arrives on a higher plane—a plane that gives him a hope that he is not altogether in the wrong."—Adventures in Endocrinology.

Pneumonia

Its Management by the Practitioner

By GEORGE W. CUSICK, M.D., Princeton, Iowa

A PHYSICIAN, of my acquaintance, recently told me there was nothing he *enjoyed* more than a case of pneumonia. What enjoyment there is in it I am unable to see, as I do not remember a single case from which I ever derived any pleasure, unless it was that "grand and glorious feeling" that comes when the crisis is safely past and the patient is on the road to recovery.

I have also heard doctors say that they have never lost a case of pneumonia. Personally, when I have pneumonia (I hope I never do), I prefer to be treated by some brother in the profession who has lost some cases, as I believe such a man would recognize the condition and give me safer treatment than the one who boasts of 100-percent recoveries.

Diagnosis

The typical case of lobar or bronchopneumonia, in the young or middle-aged adult, is usually easily diagnosed. I have seen a few cases, however, which were a little puzzling at the onset because the first complaint was epigastric pain. I remember one case in particular, in a railroad man whom I was called to see shortly after I began to practice. His chief complaint was of pain in the epigastrium and, as I found nothing much else at my first visit, I diagnosed gastritis. Imagine my chagrin to find him in the hospital next morning, under another doctor's care, with a typical lobar pneumonia. He had had a chill about half an hour after I had seen him and had called the other physician who found the true condition of things.

In children, I find the diagnosis more difficult. Many times the onset is with vomiting and abdominal pain and often a slight convulsion, rather than a chill. Though some may not agree with me, I believe that in many cases the diagnosis between appendicitis and pneumonia, in a child, is exceedingly difficult, and I am convinced that many postoperative pneumonias, so called, in children, were pneumonias from the start.

One point I wish to make in such cases is this: The child with an abdominal complaint, causing pain, gives no one about

him any peace. He is a restless, fretful, crying child. The pneumonia case lies quiet, as a rule, and is little trouble to anyone.

In a child under one year, the case will probably be one of bronchopneumonia; after the third year, lobar, in the majority of cases. Another simple point I have found to hold good in many instances is that, in the presence of fever and abdominal distress, or of fever only, without other findings, in a small child or infant, if the hands and feet are cool and the rest of the body is hot, it is probably an intestinal condition.

Contributing Causes

In the aged, I believe a good many pneumonias are induced by the recumbent position, maintained for any length of time. I am convinced that too many old people are put to bed for minor ailments and kept there until a hypostatic pneumonia develops. I make it a practice, in ordinary illnesses, to keep elderly patients quiet in a chair or in the sitting position in bed or, if this is impossible, to change their position frequently.

Unless the recumbent position is strictly indicated, keep these old people off their backs, and a good many terminal pneumonias will be avoided.

Every case of coryza, "bad cold", bronchitis, influenza, or any respiratory infection, even with only a degree of fever, should be regarded as a potential pneumonia and protected against undue exposure as much as possible. Every infectious disease, especially the exanthemata, should be regarded as the gateway to the coming of a secondary, usually a bronchopneumonia, and steps should be taken throughout its course to prevent this result.

My experience, though limited, in pneumonias following operations on the throat, and especially on the tonsils, has been that they usually turn out to be lung abscesses. In a patient who has had a tonsillectomy and, after a variable length of time, develops a cough, pain in the chest, chills and fever which shows a fluctuating course and is not excessively high at any time, look for lung abscess. Strangely enough, the cases of lung abscess which I have seen, after

tonsillectomy, were in young females. I believe there is no excuse for office tonsillectomies, after which the patient is allowed to go to some friend's home, is seen the next day by the operator and then permitted to return to his own home, which is perhaps many miles away.

Possibility of Tuberculosis

One matter which is, many times, not given a thought in a case diagnosed as pneumonia is the possibility that the case may be one of tuberculosis, either acute in onset or a breaking through of a process which has been dormant over a period of time. I believe there are many cases of recurrent or unresolved pneumonia, or cases developing empyema or hemorrhage during the attack and of caseation following it, which are tuberculous and not pneumonic. I believe that many tuberculous patients, who, in a surprising number of cases, give a history of having had pneumonia once or several times, were really tuberculous all the time.

Treatment

As to the treatment of these cases, every doctor, I believe, has probably some special medicament or technic of his own. In my opinion, each case is a law unto itself. There is no specific of which I am aware, and I believe many cases are over-treated. We are too eager to see some improvement. The patient's family and friends are all too solicitous, for nearly every layman realizes the uncertainty of the outcome of this disease, and nearly every grandma or aunt has a pet poultice or remedy which she *knows* will cure the patient.

A good nurse is, in my estimation, half the treatment. She should be a graduate, whenever possible, and one who is alert, quick-thinking and who obeys orders like a soldier. She should have some idea, too, of what to do in any one of the trying emergencies which arise in these cases.

A well-made and carefully-kept bed helps greatly. I use a jacket on all cases. This I have made, like a man's vest, of cotton of medium thickness between layers of light cloth. It should open down the front and back so as to make examination easy. I find it a good plan not to roll a patient around promiscuously until he is well along toward recovery. There is an exception to this rule which I have found to be harmless. In the case of infants and young children, I often allow the mothers to take them in their arms at intervals. I have seen many

of these little patients get their only real sleep when thus held.

I am accustomed to having the chest well anointed with hot, camphorated oil every two hours, and a hot-water bottle kept in constant contact with the affected area, outside the jacket. Perhaps I am unduly biased, but I have yet to be shown that the procedure of putting an ice-pack on the chest produces any good results. Should I ever have pneumonia, I should not wish an ice-pack used on me.

I like to use an ice-cap to the head while the fever remains high. In children, I have found a simple way to keep the head cool and have never seen any untoward results from its use. I use it in every case of fever of any duration.

Fill three, quart or pint, fruit-jars with cracked ice and securely cap them. These are placed on a flat pillow in the shape of an inverted U, and are covered with a coarse towel, the child's head being placed in the hollow of the three-sided square formed by them. The child cannot lift, and thus disturb them, nor can he get away from them. They are available in every home, whereas I find ice-caps a rarity here.

Baths and Diet

Regular spongings, with cool water, should be given; and I order an enema to be given twice daily. This is often a great help in combating the constipation and gaseous distention which are so often very distressing in these cases. As many infants and children persistently swallow coughed-up mucus, nothing is more efficacious in getting this material out of the system than castor oil.

The diet should be mostly fluid at first, and water should be given freely. Carbonated water is often relished. During the febrile stage, in children, milk may be given, but I find it more easily assimilated if diluted with equal parts of water, plain or carbonated. As soon as conditions permit, the diet should be increased, and solids should be given as soon as recovery is well started.

In many pneumonias, there seems to be a drying-out of the tissues, which appear as though burned up rapidly. The body seems to lack its natural sources of heat energy. In this type of case, a 30-percent glucose solution, given by rectal drip, is excellent. During my service in the Army, when acting as camp-surgeon of Convalescent Camp No. 2, at Liffolle-Grande, France,

I saw a few cases of pneumonia following influenza, and came across an article in an old issue of the *Journal A. M. A.*, which was sent to me from the States, in which this procedure was advocated by Dr. Solis-Cohen (I believe). I tried it, and it surely works.

Drugs

As to medicines, the fewer, the better. One medicament I have always used in every case, and in which I have great confidence, is iodized lime. I use Calcidin and give plenty of it. Syrup Cocillana Compound is an excellent cough remedy and I use it extensively. Sometimes a little codeine helps the painful, distressing cough very greatly.

At the time of the crisis, there is nothing more helpful, to tide the heart over, than a good tincture of digitalis, given as indicated. To give digitalis as part of a routine treatment is, I consider, bad practice.

I have had no better results with the biologicals than without them. It seems to me that they have not proved so specific nor so helpful as we were led to hope they might. Perhaps if I could type all my cases, here in the country, I would have

better success. I have found the tincture of iodine (U.S.P.) in 3- to 5-drop doses, well diluted, helpful in some cases. In general, I would say, do not give a great deal of medicine in pneumonia, and give it only as indicated.

Prognosis

The prognosis in a case of pneumonia is a "toss-up" at any time. One very good check on the patient's condition is a daily comparison between the systolic blood pressure, in millimeters of mercury, and the pulse rate per minute. So long as the blood-pressure exceeds the pulse rate, the outlook is good; when they are nearly equal, the case is not doing well; if the pulse rate exceeds the blood-pressure, the outlook is poor; and if it continues to climb further beyond it, the patient will probably die.

In the cases in which I have had occasion to use oxygen inhalations, I have found that they did little good.

Pneumonia is a "killer" and much is yet to be learned about it. Meantime, we cannot do too much or make too determined a stand against it, as it is no respecter of persons, age or condition.

Management of Asthma, Bronchitis and Bronchopneumonia in Children

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Asthma

WE recognize asthma as being characterized by sudden paroxysms of severe dyspnea, accompanied by some signs of bronchitis of varying degrees and recurring at intervals of varying lengths. Many physicians are of the opinion that very young infants do not suffer from asthma, and a diagnosis of bronchitis or pneumonia is usually made. Recurrent attacks of dyspnea without a rise in temperature and with the lungs containing sibilant râles which gradually clear up in from one to three days should be looked upon as asthma, no matter how young the infant; and the cessation of râles after the injection of adrenalin will prove the diagnosis.

According to Brown, there are four different clinical types of asthma occurring in infants and children:

1.—Cases which in the beginning resemble acute bronchitis, this type being frequently seen in young infants.

2.—Catarrhal asthma, or those cases occurring in the course of bronchitis.

3.—True asthma, classed frequently under the heading of acute spasmodic bronchitis.

4.—Hay asthma.

He further divides asthma into three groups:

1.—Inspiratory type, due to:

(a) Hay fever pollens of various grasses.

(b) Animal emanations:

(1) Horse, dog, cat's hair and dust.

(2) Birds' feathers.

2.—Ingestion type, due to milk, meat, eggs, grains, vegetables, fruits, nuts, fish, shell-fish.

3.—Bacterial type.

A diagnosis of bronchial asthma should be made in all cases due to foreign protein alone—pollen, animal extract, or food. This type is most frequently found in infants and young children, and successful treatment depends upon finding the offending protein (if any) and eliminating contact with it.

A diagnosis of asthmatic bronchitis should be made in all cases of asthma accompanied by change in diet, with egg, cereal or milk, in that order of frequency, as causes. In early childhood the pollens and animal extracts are the next most common offenders. In late childhood we find frequent attacks of bronchitis, pneumonia, influenza, pertussis, measles and chronic sinus infection the common diseases preliminary to a chronic bronchitis with asthma. Some authors are of the opinion that the local bronchial infection acts directly upon the sensitized nerve endings causing spasm, or that the vagus is irritated by the inflammation and enlargement of the tracheo-bronchial glands.

In our experience the first attack of asthma in infancy can usually be traced to a change in diet, with egg, cereal or milk, in that order of frequency, as causes. In early childhood the pollens and animal extracts are the next most common offenders. In late childhood we find frequent attacks of bronchitis, pneumonia, influenza, pertussis, measles and chronic sinus infection the common diseases preliminary to a chronic bronchitis with asthma. Some authors are of the opinion that the local bronchial infection acts directly upon the sensitized nerve endings causing spasm, or that the vagus is irritated by the inflammation and enlargement of the tracheo-bronchial glands.

In treating the acute attack, mustard plasters applied to the thorax will often relieve the spasm sufficiently to reduce the respiration. Adrenalin chloride given hypodermically is also a useful drug to combat the severe dyspnea. Antipyrine or bromides may also be given at bedtime, for, by so doing, the nocturnal attacks may be avoided or lessened in severity.

The general or interval treatment of these patients should be handled as follows:

- 1.—A careful history of the child's present and previous illnesses should be taken, investigating also the illnesses of parents and near relatives.

- 2.—A complete physical examination should be performed, investigating particularly the ethmoid region of the nose.

- 3.—Complete laboratory examination should include a blood count, urine examination, and x-ray picture of the lungs.

- 4.—Protein skin tests should be made to determine the possibility of an offending protein.

- 5.—Treatment of the ethmoid region of the nose by a competent rhinologist, by means of infiltrating the submucous tissues of the nose and ethmoid regions with a col-

loidal silver solution, according to the methods of Dowling of Albany and Haseltine of Chicago.

- 6.—The administration of calcium for the following reason, as outlined by Pottenger: Inasmuch as the activity of the vagus nerve which belongs to the parasympathetic system is antagonized by the sympathetic nerves; and inasmuch as relative increase in the calcium ions produces the same effect as sympathetic stimulation; the administration of calcium is a rational therapeutic measure in combating asthmatic paroxysms.

- 7.—The exposure of the body to the ultraviolet rays of a mercury vapor quartz lamp for the following reasons: Novak and Hollender, in a series of patients, found the calcium content of the blood serum to be low in hay fever and asthma. They also state there is evidence of metabolic change in the animal body brought about by solar rays, in the fact that the inorganic phosphate was brought up to normal by sunlight and also by carbon-arc irradiation. A similar effect was had with calcium in the blood. The ultraviolet light seems to be necessary for the normal metabolism of the infant. Exposure to the mercury vapor quartz light, together with combined calcium and thyroid therapy, appears to fix permanently the ionic calcium content of the blood serum.

The lamp is raised about one meter from the patient and fractional body exposures are made two or three times weekly or oftener. The time of exposure, at first two minutes, is increased at each treatment by from two to three minutes, depending upon the tolerance of the individual. At each successive treatment the distance between patient and lamp is decreased by three inches. The smallest distance reached is about eighteen inches while the longest exposure made may reach fifteen minutes or, in exceptional cases, when the tolerance of the individual is great, twenty minutes.

- 8.—Treatment by means of autogenous vaccines made from the organisms grown in the nose and throat cultures have, in some patients, been of value.

Bronchitis

The preventive treatment of bronchitis in children should include a careful examination to determine whether or not rickets, or a rachitic tendency, is present. In all such children the use of cod-liver oil, together with a liberal amount of outdoor air and sunshine, will be useful. All children who have had bronchitis, whether

or not they have a rachitic tendency, should have their home life properly regulated, to prevent over-clothing and exposure to the dry, overheated atmosphere of the modern apartment house. This over-clothing habit is not confined to ignorant people, nor to the children of foreigners; it is prevalent among the native born and people of a high degree of intelligence and social placement.

That focal infections in diseased tonsils and adenoids may produce a pathological bacterial flora in the bronchi, has been demonstrated experimentally. The removal of infected tonsils and adenoids should always be advised, and the risk of allowing older children to visit crowded rooms, such as motion picture theaters, especially at the time of year when "colds" and "grippe" are prevalent should be made clear to parents.

The curative treatment of bronchitis consists largely, in the mild cases, of judicious nursing care.

A dose of suitable laxative is advisable at the beginning of the attack. If the bowels are constipated at the onset, an enema of warm water may be given, in addition to the laxative administered internally.

Hot baths, especially at the beginning of the attack, are useful. The application of cotton jackets, poultices, or clay pastes, to the skin is of little or no therapeutic advantage, but counterirritation can be brought about by the use of mustard paste made by adding one tablespoonful of dry mustard to ten tablespoonfuls of flour, with sufficient water to make a paste that will spread readily on muslin. When this is applied to the chest and back, in a jacket-like manner, the skin should become pink in about twenty minutes. The jacket should then be removed, the mustard washed off, and petrolatum or cold cream spread over the reddened area.

The use of steam inhalations, medicated with various volatile substances, such as compound tincture of benzoin, is also a practical method of applying remedies to the bronchial mucosa. This is perhaps of the greatest value in those conditions which have been preceded by an acute laryngeal irritation, and in which the cough is hoarse and brassy. The inhalation period should not last more than one-half hour and should be repeated at intervals of three or four hours.

The diet in bronchitis should be regulated according to the age of the child and the severity of the attack. With infants solid

foods should be omitted during the acute stages of the disease. For older children prunes, cereals, apple sauce and similar foods should be given, feeding at intervals of three or four hours. Water should be given between the feedings.

The treatment of the cough consists in prescribing at first small quantities of an opiate to older patients with an unproductive cough, provided the coughing effort seems effectual. The use of expectorants is rather less favored now than in the past, since all expectorants except the iodides act because of their nauseating properties. Codeine or other opiates may be given to the vigorous child, but should not be used in the very young, and never unless the skin color is good and the coughing act is strong and productive.

Persistent coughs in the latter stages with abundant secretion are benefitted by emulsion of eucalyptol or of creosote given in doses proportional to the age of the child. Thiocol may also be employed in these sub-acute coughs.

The fever is usually best controlled in children by tub baths; in infants by packs in wet towels. Unless the temperature exceeds 102° F., simply sponging the face and extremities with warm water will be sufficient.

In the severe type of the disease in infants, cyanosis and respiratory failure may dominate the clinical picture. Alternate hot and cold applications to the chest may excite deeper breathing and counter-irritation by mustard paste should be used, and repeated two or more times daily.

Alcohol in the form of brandy and whisky, given well diluted every three or four hours, will be found helpful in combating the circulatory weakness that almost invariably accompanies the cyanotic condition.

In older children with mild symptoms, unaccompanied by fever, the use of a laxative, a simple sedative such as brown mixture, and confinement to the house will usually be sufficient to prevent extension of the inflammation.

No matter how mild the attack may have been, children who have had bronchitis with fever should be required to remain in bed for a day or two after the maximum temperature on the preceding day has been normal.

The tenacious cough which often follows severe attacks is due to persistent pharyngeal infections or irritation in the larynx or trachea. Attention to the gener-

al hygiene of the child, the correction of anemia, the administration of cod-liver oil, and the use of eucalyptol in liquid petrolatum sprayed in the nostrils, may be of assistance in bringing the child back to a normal state.

Bronchopneumonia

Although there is no specific treatment much can be done along the lines of prophylaxis; or if the disease has developed, efficient nursing, maintenance of the child's general strength, and intelligent treatment of symptoms and complications are beneficial.

Prophylaxis.—Under-nourished and delicate children should be carefully protected from sudden lowering of the body resistance by chilling, and from proximity to individuals suffering from any respiratory infection. The same care should be exercised with children suffering from any one of the infectious diseases, particularly measles, whooping cough and epidemic influenza. Mild and apparently insignificant upper respiratory infections should never be ignored; on the contrary every effort should be made to cure the infection early.

General Hygienic Treatment.—In the preparation of the sick-room there are several details which are essential to successful treatment. The provision of fresh air and sunlight is of the utmost importance. The ideal temperature of the room is often a matter of experiment, but in general it may be said that where bronchitis is present warm air is preferable, and in those cases which simulate lobar pneumonia, and which are characterized by massive consolidation and absence of bronchitis cold air gives the best results. When there is a persistent distressing cough with secretion into the bronchial tract, attended by dyspnea or cyanosis, the inhalation of moist air affords some degree of relief. For this purpose the child may be given steam baths, by erecting a sheet over the crib and receiving the steam from a kettle, for periods of twenty minutes, four or five times daily. In less severe cases the simple procedure of keep-

ing a kettle boiling constantly in the sick-room prevents the air becoming dry and irritating.

The actual care of the patient should be entrusted to a competent nurse. There is no disease in which all the small attentions such as bathing, cleansing of the mouth and nasopharynx, frequent changing of position, etc., are of such importance as in bronchopneumonia. The diet should be light and as nourishing as possible. Counterirritation, by means of mustard pastes applied to the chest three or four times a day, is distinctly beneficial if there is much bronchitis present.

Medicinal.—If the cough is so incessant as to interfere with sleep, a sedative is indicated, but as a rule expectorants are not of much value. Small doses of codein or Dover's powder are recommended. Alcohol is useful in supporting the general strength of the patient. Whisky or brandy in twenty to thirty drop doses, well diluted, every three or four hours, is the most suitable method of administration.

Hyperpyrexia, particularly when combined with nervous symptoms, demands hydrotherapy in the form of sponges or cold packs. For sudden collapse the various cardiac and respiratory stimulants should be employed. For persistent and intense cyanosis hot mustard baths, cardiac and respiratory stimulants and inhalation of oxygen are all of use. The latter procedure gives only very transient relief. In protracted cases, and especially in those with a marked degree of anemia, transfusion of blood from a suitable donor is undoubtedly of value by increasing the child's resistance.

Specific.—The administration of anti-pneumococcus serum in Type I. bronchopneumonias is always worth a trial although the results reported are not so encouraging as in lobar pneumonia. In the treatment of pulmonary complications following epidemic influenza, injections of serum obtained from patients convalescing from the disease have been attended by success.

122 South Michigan Avenue.



The Present Status of the Treatment of Pneumonia by Diathermy

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FOUR years have elapsed since the first clinical study of the effect of diathermy in pneumonia was undertaken in the U. S. Marine Hospital No. 21, Staten Island, N. Y. There has been a rapidly increasing number of case reports available, due to the fact that this work has been instituted in quite a number of hospitals throughout the country. With increased experience have come a few modifications in our conception of the results obtained by this treatment. In the main, however, there has been general confirmation of our early reports.*

Technic

This treatment consists in the application of the bipolar high frequency current of D'Arsonval, directly through the affected area, developing a central and controlled heat within the lung. We have used the anteroposterior route, and applied the current by means of flexible metal plate electrodes, which were thoroughly lathered with shaving soap and warm water.

In the application to a single lobe electrodes about 5 by 7 inches are employed. In treating two adjacent lobes or both bases the electrodes selected are about 5 by 9 inches. In treating two nonadjacent lobes separate applications are given by means of electrodes of the same size applied to a single lobe. The posterior plate is lathered, clipped to a cord, placed on a folded bath towel or small pillow, the mattress depressed, and the electrode slipped under the patient to the proper position. The anterior plate, similarly prepared, may be gently held on the chest by the finger tips of the operator. Care must be taken, in the case of a patient who is restless or irrational, to protect the cords from any possibility of being torn loose by the patient.

When everything is in readiness the current is turned on slowly, about five minutes being consumed in raising it to the maximum of 1400 to 2000 milliamperes. In the usual case this maximum is maintained for twenty to thirty minutes, with an additional three minutes in which the current is slowly and gradually turned off. Except for the

first two or three treatments, in a very ill patient, we are now employing somewhat lower milliamperage—1200 to 1400 for thirty minutes—rather than higher milliamperage for less time.

Symptomatic Relief

The symptomatic relief described by the writer in his first papers on this subject has been almost universal in the hands of everyone using this technic. There is a lessening or cessation of the cyanosis; relief of pleuritic pain and associated respiratory grunt; increase in depth of respiration and in the amount of perspiration; together with a slight slowing and steadying of the heart rate, which is usually marked if the pulse was thready and irregular in the beginning. There is usually a fall in systolic blood pressure, which was at first thought of as a contraindication when hypotension was marked. We now believe the relief afforded by the treatment is of greater importance, and disregard any reasonable degree of hypotension.

Nearly every patient has expressed a feeling of relief and of symptomatic benefit from the treatment. As a rule, patients pass into a quiet, restful sleep of two to four hours' duration. In many cases this result has been one of the most favorable obtained, and is considered to be greater than could safely be obtained with opiates. In a few cases, late in the disease, when patients were not cyanotic or in pain and were restless and irritable, the symptomatic relief was not so apparent. Symptomatic relief has been present, however, in cases of streptococcal pneumonia, ether and influenzal pneumonia, even where we could not seem to affect visibly the outcome of the disease.

It must be evident that the symptomatic relief just described may in itself turn the scales in favor of recovery in many cases of doubtful outcome. Improved aeration of the blood, the recuperative effect of sleep, the mental encouragement from the relief afforded the patient, are factors of no mean importance in critical cases.

Several series of controls have been studied, in which alternate cases were treat-

* "Diathermy and its Application to Pneumonia". Stewart. New York: Paul B. Hoeber, Inc.

ed with diathermy, and all cases given the same general medical care in the same hospital wards. As our total treated cases to date are only about two hundred and eighty it is impossible to state with any degree of certainty that mortality is lessened by the use of diathermy, although, with increased experience and earlier application of the treatment, the presumption that diathermy has a favorable effect on mortality is being strengthened. In the entire series in which diathermy was applied before the third day only one or two cases have died. The grand average death rate in treated cases to date is 13.6, while that of the different series of controls ranged between 25 and 42.9 percent.

Effects produced

By what factors other than those of the symptomatic relief above mentioned can this apparent improvement in mortality be explained? There is an undoubted temporary and partial permanent improvement in the circulation around the consolidated area which accounts for the lessening of the cyanosis. It is not probable that the consolidated area itself is affected, nor do we think that a sufficient degree of heat is developed to have a lethal effect upon the organism. If that were possible, a premature crisis could theoretically be produced, but, in our experience, it has not been thus brought about.

One marked and almost invariable effect of the use of diathermy has been to produce a temperature drop by lysis, which, as a rule, is instituted very shortly after the first treatment, even though this be the second day of the disease. In only about four or five cases in the entire series treated has there been a temperature fall by crisis or even semi-crisis.

One of the factors in the body's defense against this organism is undoubtedly the bactericidal action of the enzymes produced by the phagocytes. This action is essentially chemical in its nature and is increased by heat, as most other chemical actions are. This fact undoubtedly explains most febrile reactions on the part of the body in the presence of bacterial invasion. In the case of treatment of pneumonia by means of diathermy we are producing a central and intense heat at the site of the bacterial invasion without any increase in the oxidation process. In other words, we are adding an intense artificial fever to the natural one. Apparently this artificial

temperature is a nearly complete substitute for fever, as its application is followed by lysis. The conservation of the body's available energy in the succeeding days, up to the time of natural crisis, must be considerable, and constitutes a factor in recovery to be reckoned with.

It is interesting to note that the temperature does not reach normal any sooner than it would have done had the disease gone on to crisis, and this is the basis for our belief that we do not obtain any direct bactericidal effect from the heat, nor, indeed, any real inhibitory effect by its presence. The remarkable mortality figures above referred to, in cases treated before the third day, may be explained by the fact that until the period of gray hepatization begins there is a real though sluggish circulation within the involved area, and it is possible that, under these conditions, diathermy is of greater benefit than when applied later in the disease.

The writer and several of his confreres have apparently seen pneumonia aborted by the very early use of diathermy. In none of these cases were x-rays possible or any means at hand to prove that a pneumonic process had actually started. It is mentioned, then, merely as a point of passing interest and not with any assurance that pneumonia actually can be so aborted.

Diathermy and Serum

In a comparison of the results obtained by the use of serums and by diathermy in this disease several points are of interest. Even the most improved serums seem to be of value only in types I and II, and occasionally in type III, representing, all told, but slightly over fifty percent of cases. It is usually necessary to wait one or two days for a report on the typing. The efficacy of serum being in inverse proportion to the length of time at which it is given after the disease has started makes this necessary delay a distinct disadvantage. Without extraordinary care, anaphylaxis has to be reckoned with in the use of serum, and a number of sudden deaths from its use have been reported. On the other hand, no delay is necessary in the application of diathermy because it has apparently been equally efficacious in all types, typing being of interest merely in the classification rather than a prerequisite to its use. There is, however, no contraindication to the use of serum in addition to diathermy should the disease be of a type in which it is indicated.

Summary

Diathermy, properly applied, is absolutely safe. Not a single untoward effect has followed the giving of some 2,400 different treatments in this disease. Its application brings immediate and almost invariable symptomatic relief lasting from two to four hours. It may safely be repeated at four-hour intervals when necessary, although two or three treatments per day will generally suffice. It has apparently lowered the death rate, but this point will be thoroughly established in the near future by reports on sufficient additional cases.

Its disadvantages may be summed up in the statement that only clinical relief, with no apparent change in mortality, has been obtained in the case of streptococcal and ether pneumonia. Post-influenzal pneumonia of the type that followed the 1918 epi-

demic has not responded well, although the dry lobular type seen last year has apparently been improved and benefited by its use. Technic is important, and the treatments should never be given by one unskilled in the management of high frequency apparatus.

As the treatment of pneumonia by diathermy has proven symptomatically beneficial, with a probable effect in lessening mortality, its employment in this disease seems to be indicated. The unbiased opinion expressed of the results obtained, by some seventy different clinicians who have closely studied its effect upon their patients has been one of the most gratifying results of this work. The writer believes that one important measure in the general management of this disease has been found.

420 Temple Street.

The Specific Diagnosis, Treatment and Prevention of Acute Lobar Pneumonia in the U. S. Army*

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THE prevention and treatment of pneumonia, and of the other acute respiratory diseases, is now one of the most important problems of the Medical Department of the U. S. Army.

Thanks to modern sanitation and to the introduction of typhoid vaccination into the Army in 1909 by General F. F. Russell¹, the incidence of the intestinal infections, once the menace of all armed forces, has been reduced to a relatively unimportant figure.

At present, acute infections of the respiratory tract cause a higher mortality and greater disability than any other group of infections. In 1923, diseases of this type were responsible for over one-fourth of the days lost in the Army from infections². Respiratory infections were much more prevalent and serious under war conditions. During the World War approximately 4,000,000 men were mobilized for military service, and of this number about 58,000 died of disease. Of the total number of deaths from disease approximately 47,000

(82%) were the result of respiratory diseases, and the pandemic of influenza, with resulting pneumonias of one kind or another, accounted for the majority of these deaths. It is estimated that, under ordinary conditions, at least one-tenth of all the deaths which occur in this country are due to pneumonia; and that about two-thirds of these are due to primary pneumonia of the acute lobar type.

Acute lobar pneumonia, or primary pneumonia, is an acute infectious disease characterized by a massive inflammatory involvement of one or more lobes of the lungs. The *Diplococcus pneumoniae* is practically always associated with it and can be found either in the lungs or in the blood.

The pneumococcus was discovered in 1881 by Sternberg³, later Surgeon General of the U. S. Army, who produced a fatal septicemia in rabbits by injecting them with his own saliva, which contained pneumococci. The organism which he isolated, and called the micrococcus of sputum septicemia, was undoubtedly a pneumococcus and was probably a member of what we

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now know as type IV. Pasteur¹ independently and simultaneously described the pneumococcus. It was not, however, until 1886 that the investigations of Fraenkel² and Weichselbaum³ established the causal relationship between the pneumococcus and pneumonia. The studies of Neufeld and Handel⁴, Dochez and Gillespie⁵ and others have shown that a number of different serological types of pneumococci exist. This discovery made possible advances in the diagnosis, prognosis, treatment and prevention of pneumococcus pneumonia.

Three different races of pneumococci, known as types I, II and III, can be identified by their specific serological reactions. An additional collection of heterogeneous pneumococci which do not belong with either of these three types are classified as type IV. Still other types may exist, as, for example, the so-called type A pneumococcus described by Lister⁶ in South Africa. Morphologically and culturally, types I and II are typical pneumococci and may be sharply differentiated only by specific agglutination and protection tests. The type III pneumococcus, formerly known as *Streptococcus mucosus*, is included with the pneumococci because of its bile solubility, inulin fermentation and its typical pathogenicity. Type IV pneumococci make up a group of organisms which serologically do not belong with either of the three types named above. Certain atypical members of type II have been described as sub-types IIa, IIb and IIx.

Types I and II pneumococci have been reported by Cole⁷, Nichols⁸, Kolmer⁹ and others as the most common causes of acute lobar pneumonia. Spooner¹⁰ reported 1103 cases from the majority of which type IV pneumococci were isolated.

TABLE I

Different Types of Pneumococci in Sputum
From Cases of Acute Lobar Pneumonia

	Total Cases	Type I	Type II	Type III	Type IV
Cole ¹⁰	223	35%	34%	10%	21%
Nichols ¹¹	150	56%	22%	27%	20%
Kolmer ¹²	500	33%	33%	13%	20%
Spooner ¹³	1103	25%	12%	14%	49%

Pneumococci types I and II, which are responsible for a large percentage of primary lobar pneumonias are rarely found in the mouths of normal persons. As shown by Avery, Chickering, Cole and Dochez¹⁴ in Table II, the pneumococci most frequently present in normal mouths belong in type IV.

TABLE II

Distribution of Different Types of Pneumococcus in Mouths of Normal Persons¹⁴

Types of Pneumococcus	No. cases	Percent
I	1	0.8
II	0	0.0
IIa	1	0.8
IIb	7	5.8
IIx	13	11.8
III	34	28.1
IV	64	52.9

Pneumococcus present 116

Pneumococcus absent 181

297

Bacteriological Diagnosis

Sputum—types of pneumococci:—The determination of the types of pneumococci in sputum, from cases of pneumonia, is a routine procedure in all army laboratories. Briefly summarized, the method used is as follows: (a) After cleansing the patient's mouth, a specimen of sputum coughed up from the lungs is collected in a sterile petri dish. (b) Smears stained by Gram's method are examined for pneumococci and cultures are made on blood-agar plates. (c) After washing the sputum in sterile salt solution, a small portion is ground up in a mortar with 1 to 2 Cc. of salt solution and about 0.5 Cc. of this is injected into the peritoneal cavity of a white mouse. (d) If virulent pneumococci are present the mouse should become sick, or die within 10 to 24 hours. An autopsy is performed on the animal and the peritoneal exudate is examined for pneumococci. Gram's stain of smears, cultures, bile solubility and agglutination tests are made of the pneumococci present. (e) Stained smears, and cultures on blood-agar plates are made from the heart's blood of the mouse. Organisms of typical morphology and cultural reactions, which are soluble in bile are considered to be pneumococci, while the type is indicated by the agglutination reaction with immune serum. Details of the methods used routinely in the Army are given in Medical War Manual No. 6¹⁵.

When mice are not available, other methods, such as Avery's¹⁶ special medium, or the coagulation method of Krumweide may be used for the determination of the types of pneumococci in sputum.

Urine—precipitation reaction:—In about 50 percent of pneumonia cases a specific precipitation reaction occurs when urine

from the patient is added to immune serum of the type associated with the infection. When this reaction occurs a diagnosis can be made immediately.

Blood — Culture: — *Pneumococcus* septicemia is not uncommon during the course of pneumonia. Positive blood cultures have been reported in from 25 to 50 percent of cases examined. For cultures at least 5 to 10 Cc. of blood should be added to flasks containing not less than 100 Cc. of glucose broth pH 7.6; in addition to agar plate cultures. Frequently a growth of pneumococci is obtained in blood cultures sufficient to make agglutination tests and determine the type of the infecting organism within 24 hours. The development of a septicemia is considered to be of grave prognostic significance. The mortality has been reported as 74.4 percent when due to type II pneumococci; 100 percent when due to type III; 52.3 percent when type IV is responsible; and only 26 percent when type I is the infecting organism. This latter result is ascribed to the beneficial effect of serum therapy.

Serum Therapy

Type I antipneumococcic serum is given to suitable cases of pneumonia caused by type I pneumococci. Therapeutic sera produced before the recognition of the various types of pneumococci were used with very irregular results. However, it is now known that type I antipneumococcic serum is valuable in the treatment of pneumonia due to type I pneumococci; and that type II serum, while less successful, is possibly of some value. Since the success of any form of serum treatment is influenced by the duration of the disease before treatment is begun, it is important that the type of the infecting pneumococcus be determined, and serum administered as soon as possible.

All patients infected with type I pneumococci should be tested for sensitivity to horse serum and desensitized if this procedure is indicated. Then 90 to 100 Cc. of type I antipneumococcic serum diluted with an equal amount of sterile normal salt solution is warmed to body temperature

and injected very slowly, intravenously. Ten to 15 minutes should be spent in injecting the first 15 Cc.; during which time the patient should be watched carefully for increased pulse rate, dyspnea, pallor cyanosis or urticaria. If these symptoms occur the injection should be delayed 15 to 20 minutes or until the symptoms subside. The total dose of 90 to 100 Cc. of serum should be repeated if necessary, unless there are contraindications, until the desired favorable result is obtained. The average total amount of serum required varies with individual cases, depending to some extent on whether or not treatment is begun early in the course of the disease.

The results following treatment of pneumonia due to pneumococci type I with type I immune serum are definite and striking. Cole¹¹ contrasts a mortality of 10 percent in a large group of cases treated with serum with a death-rate of about 30 percent in cases which did not receive immune serum. Colonel H. J. Nichols¹², working in a camp epidemic of lobar pneumonia at Fort Bliss, Texas, found that the mortality of type I pneumonia cases, treated early with type I serum, was only 8 percent, while the mortality of those of the same type treated otherwise was 39 percent.

Much important work has been done on the production of refined and concentrated antibody solutions for therapeutic use by Gay and Chickering¹³, Huntoon¹⁴, and others.

Vaccines have not proven of practical value in the treatment of acute lobar pneumonia due to pneumococcus.

Prophylactic Vaccination

Prophylactic vaccination against pneumonia has not yet proven to be of definite value. A number of attempts have been made to control the spread of pneumococcic pneumonia by the vaccination of normal individuals, with the various types of pneumococci. It was hoped that the results obtained might compare favorably with those following vaccination against typhoid and the paratyphoid fevers, and smallpox, which have been almost eliminated from the Army.

TABLE III

	Cases Treated with serum	Died	Percent	Cases not treated with serum	Died	Percent
I	63	5	8	18	7	39
II	23	5	21.7	7	4	57
III	3	1	33	0	0	—
IV	24	4	16.6	6	0	0

Nichols and Lambie¹²

The results obtained by Wright²⁰ with pneumococcus vaccinations before the differentiation of pneumococcus types are of doubtful value. Lister²¹ in South Africa, using his types A, B and C pneumococci, vaccinated a large group of individuals with encouraging but inconclusive results.

In the U. S. Army, a saline antipneumococcic vaccine was used at Camp Upton in 1917 by Majors Cecil and Austin²² in the vaccination of 12,519 men against types I, II and III; and later a lipo vaccine was administered to troops in France²³. The results of these vaccinations were also encouraging but still unconvincing. In 1919-1920 a broth vaccine containing pneumococci types I, II and III was tried in the army with apparently good results. Additional studies were made in some of the large camps during the winter of 1920-1921, but due to the nonepidemic conditions prevailing the results were inconclusive. For the winter of 1921-22 a new saline vaccine was used on 4,675 volunteers who were studied along with 15,713 uninoculated controls. This vaccine contained 1,000 million each of pneumococcus types I and II, 1,000 million each of hemolytic streptococcus, S-3 and S-10, and 2,000 million of influenza bacilli in each cubic centimeter. There was no decrease in the incidence of respiratory diseases as a whole in the vaccinated group. However, it appeared that the younger men in the vaccinated groups were less susceptible to respiratory infections than men of similar ages who had not been vaccinated. Because of the low incidence of lobar pneumonia, at the time, these studies were as inconclusive as the preceding ones.

While the work done so far has failed to establish the value of vaccination as a prophylactic measure in pneumonia, it is not considered that the question is settled. The problem is of enough importance and promise to warrant the wholesale use of vaccination in epidemic periods under conditions which allow careful comparison of vaccinated groups with unvaccinated control

groups. It is to be hoped that eventually the incidence of pneumonia and of the great group of acute respiratory diseases may be reduced by the use of some type of vaccine.

Summary

1.—Acute lobar pneumonia is practically always caused by the *Diplococcus pneumoniae*, either types I, II, III or IV.

2.—In the U. S. Army laboratories the determination of types of pneumococci in sputum from cases of pneumonia is a routine procedure.

3.—Type I antipneumococcic serum is a valuable therapeutic agent in acute lobar pneumonia caused by type I pneumococci.

4.—The use of pneumococcus vaccines to prevent the occurrence of pneumonia in normal persons has not yet been proven of great value, but the results are encouraging enough to warrant further investigation.

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Diathermy in Pneumonia

By LLOYD M. OTIS, M.D., Celina, Ohio

THE subject of diathermy, being comparatively new to the majority of the medical profession, will perhaps be better appreciated after preliminary explanation.

Diathermy is thermopenetration, whereby we can apply heat to the interior of the body. It is a process of heating through the tissues, in contrast to our former methods where heat was applied externally and only a small amount radiated below the surface.

Diathermy is applied by means of two electrodes, generally placed on opposite sides of the part to be treated. By varying the sizes of these electrodes, the heat can be concentrated to any desired depth. In other words, an internal poultice can be applied at any depth required by the pathological process.

When we recall that the physiological processes of repair are all of an inflammatory nature, it is readily seen that any physical agent that initiates, accelerates, or retards these changes can be of great service in our therapeutic armamentarium.

In dealing with a diseased condition by means of a physical agent, one must analyze the pathological processes taking place and the physiological reactions of the agent employed.

Physiology of Diathermy

What are the physiological reactions of diathermy? The primary effect is the generation of heat. An intense or mild arterial hyperemia results (depending upon technic). The hyperemia brings about increased metabolism in the part by dilating blood vessels, opening lymph channels, activating phagocytes and enzymes and greatly increasing their number and by increasing osmotic processes. The passage through the tissues of such rapid oscillations produces a vibratory effect on each molecule and there is a general reactivating of all cells. Tissues are drained and relieved of congestion and stasis, giving marked relief from pain. The tissues being flushed with blood causes absorption of the inflammatory products and deposits in the tissues and promotes oxidation. The high temperature that is generated in the tissues serves to inhibit bacterial growth. With the understanding of the physiological

changes brought about in the tissues by diathermy, its uses are obvious.

The pathological processes met with in pneumonia vary from congestion to consolidation. Referring to the preceding paragraph, we see that these are just the conditions in which diathermy should be most useful.

Effects in Pneumonia

Osler has said, "Pneumonia can neither be aborted nor cut short by any known means at our command." If he could have had a diathermy outfit, this statement probably never would have been made. The disease, taken in its incipency, is practically 100 percent abortable. At a later stage it is considerably shortened. Following this treatment, x-ray examination definitely proves that the exudates and consolidation are absorbed in one-half the time. Complications seldom occur and the mortality rate is reduced to a level with less severe infections.

Not only is the lung dealt with during this treatment but a better cardiac circulation is maintained and the heart's increased duties are cared for with less damage, thus reducing possibilities of endocarditis and pericarditis.

One should see a pneumonia patient treated in order to appreciate the changes in his signs and symptoms. Shortly after diathermy is begun, the operator sees his patient becoming more comfortable. Respiratory effort is lessened; his expiratory grunt disappears. If he is cyanosed, you will see this condition disappear. Several hours after treatment, the patient seems almost completely relieved, symptomatically. He generally enjoys his first sleep and the physician sees his patient on the road to recovery.

Physiotherapists can definitely make one statement: That, regardless of the stage at which diathermy is begun, the disease is greatly shortened; the temperature curve goes down after the first or second treatment; and the patient is relieved of all symptoms, a severe disease being converted into a mild one. I can express one opinion that will be borne out by any one who has employed diathermy in pneumonia, and that is: If all cases were started on this treat-

ment within 48 hours from their onset, the medical profession would never see another case of typical pneumonia.

I have picked out at random from my pneumonia cases the type the physician ordinarily meets and will show the response of each to the treatment. In this list are the following: lobar, lobular, central, unresolved, and two postoperative cases.

Lobar Pneumonia

Case 1.—Mr. H. L.: Confectioner, age 53. On April 3, 1924, he had a chill lasting about 20 minutes. In a few hours he developed a severe pain in the lower right chest, considerably aggravated by a dry cough. At noon, the following day, he was removed to the hospital. Upon examination, the lower lobe of his right lung presented increased tactile fremitus; dullness upon percussion; tubular breathing upon auscultation. The sputum was blood-stained; temperature 104° F.; pulse 144; respiration 30; blood count 28,250 leucocytes. Diagnosis: Lobar pneumonia.

Treatment with diathermy was instituted, the first application lasting 45 minutes. At 3 P. M. the same day, the temperature was 103° F.; pulse 120; and the patient felt more comfortable. In the evening he sweat freely and rested well after midnight. At 6 A. M. the next morning, his temperature was 101° F.; pulse 112; respirations 28. At 7:30 A. M., another diathermy treatment was given, and, at 9 A. M., the temperature was 99.2° F.; pulse 122; respirations 28. In the afternoon, another treatment was given lasting one hour, and, at 6 P. M., temperature was 100°; pulse 106; respirations 28. At 6 A. M. the following day, his temperature had dropped to 98.2°; pulse 86; respirations 22; at 6 P. M., however, his temperature was 99.2°; pulse 100; respirations 28. This was his last rise of temperature, crisis taking place on the 3rd day. Daily treatments with diathermy were continued until he left the hospital on the 6th day. Five days after the onset he was walking about the hospital.

Lobular Pneumonia

Case 2.—Mrs. A. W.: age 45, housewife on farm. On December 28, was taken with chills and shortness of breath. Ached throughout body. On Sunday, December 30, she began to have a slight cough, which was painful and at times blood-streaked. Shortness of breath grew worse and patient became cyanosed. When, on January 6, she was brought to the hospital, x-ray showed a severe bronchopneumonia in right lung and some involvement of upper left lobe. Right lung almost completely consolidated. Patient entered with temperature 102.6° F.; pulse 130; respirations 48. Diathermy was given the evening of entrance. The next day two treatments, and, at 9 P. M., a little over 24 hours after entrance, she had a temperature 99.6° F.; pulse 100; respirations 36. It was not until

the fourth day that respirations were normal, and from then on the patient was in good general condition. Began walking on sixth day. Discharged the seventh day. X-ray on January 12, six days after entrance, showed lung entirely cleared up with exception of slight peribronchial thickening.

Unresolved Pneumonia in Left Lung, Later Complicated by Central Pneumonia in Right

Case 3.—Mr. J.: age 20, developed left lobar pneumonia about the 7th of January, 1925. He went through the disease without any complications and seemed to be convalescing normally until January 30, when he showed an elevation of temperature and complained of pain in the right lung. Dyspnea was severe and pulse 140. I was called in consultation February 2, and we were unable to diagnose the condition except that his left-sided pneumonia had not entirely resolved and a dull spot was found about three inches in diameter on the right. The extreme pain led us to do a paracentesis, expecting to find a pleural involvement. We moved him to the hospital, and the x-ray cleared up the diagnosis. There was a central pneumonia in the right chest and an unresolved pneumonia in the left.

At the time he entered the hospital, 6 P. M., he had a temperature of 102.5° F.; pulse 145; respirations 38. Diathermy was started at once and he slept for two hours after the treatment. At 7:30 P. M., the temperature was 101.2°; pulse 140; respirations 34. He was, at this time, perspiring freely. During the night he still had considerable pain and diathermy was repeated at 2:30 A. M. Treatments were given for 40 minutes on each side of chest. At 5 A. M., his temperature was 99°; pulse 126; respirations 32. In the afternoon, he developed a severe attack of hiccough and the third diathermy treatment was given. The hiccough stopped, and, at 6 P. M., his temperature was 98°; pulse 100; respirations 18. The following day he expectorated considerable bloody sputum and perspired freely. Diathermy was continued twice daily. Cough stopped on the fifth day. His strength returned rapidly, his appetite was good, temperature and pulse normal. He was kept in bed eleven days and in the hospital two weeks in order that a good convalescence might be obtained.

Postoperative Pneumonia

Case 4.—Age 23, operated upon January 21, 1924, for hernia. On January 24 at 4 P. M., he had a temperature of 102.6° F.; pulse 116; respirations 30. A physical examination disclosed the signs of a postoperative pneumonia. At 6:30, diathermy treatment was given. The next day at 4 P. M., his temperature was 101.8°; pulse 110, respirations 28. Diathermy treatment was given twice each day and on the third day his temperature was 99°; pulse 82; respirations 22. After that, his temperature, pulse and respiration remained normal.

Case 5.—Mr. B. entered hospital August 30, 1925, for uncomplicated inguinal hernia. Operated upon at 9 A. M., August 31. The following day, September 1, he was considerably annoyed by a hacking cough; and, at 5:30 P. M., he had a temperature of 101° F.; pulse 92; respirations 26. On September 2, the cough was worse, dyspnea appeared, with a sensation of tightness in chest. At noon the temperature was 102°, rising to 103° at 6 P. M.; pulse 114; respirations 28. An examination of the chest showed that pneumonia had developed. At 7 P. M., a 45-minute treatment of diathermy was given; at 9 P. M., the patient was perspiring freely and was feeling much easier; at 10 P. M., the temperature was 102°; pulse 98; patient resting fairly well, but slept only at intervals. At 6 A. M., temperature was 98.6°; pulse 88. A second treatment was given at 7 A. M. At noon, the temperature was 98.4°; pulse 90; respirations 20. Another treatment was given in the afternoon. At 4 P. M., the temperature was 98.8°; pulse 90, respirations 20. Did not sleep well this night but was comfortable. At 6 A. M., September 4, temperature was 98.2°; pulse 86. From this time on there was no fever and no more diathermy was given. When we summarize this case we see a pneumonia patient with temperature 103°; pulse 114, at 6 P. M., becoming normal over night after the first application of diathermy. A total of only three treatments was given and the patient went on with a normal convalescence from his operative conditions.

Technic

This is comparatively simple. The bipolar method, through and through, is used. Two electrodes about 4x6 inches are placed over the affected lobes, one anteriorly and the other posteriorly. The electrodes can be cut from a strip of block tin, or German silver mesh may be used. Hot soap suds is applied to the skin and electrodes. The current is started at 300 to 400 milliamperes for two or three minutes, then raised to 600 to 700 ma. for two or three minutes and gradually advanced in this way up to the patient's tolerance of heat, which will vary from 1700 to 2300 milliamperes. It is maintained at this heat for not less than 30 to 40 minutes. Then the rheostat is gradually reversed during about 5 minutes. The entire treatment requires from 45 minutes to one hour.

Conclusions

The practice of medicine has been given a valuable therapeutic agent in diathermy. Pneumonia, in the first 48 hours, is generally aborted. Applied later, the disease is considerably shortened, the patient's symptoms reduced to a minimum and the disease freed of it high mortality.

The Therapeutics of Pneumonia

By GEORGE H. CANDLER, M.D., Chicago

MANY years ago Osler wrote: "There is no specific treatment for pneumonia and patients are often more damaged than helped by the promiscuous drugging which is only too prevalent". A study of the various late editions of standard textbooks on "Materia Medica and Therapeutics" would strengthen the conviction that as it was then, so it is also today. There are, of course, at this moment, more men than formerly who adhere strictly to one line of therapy regardless of individual conditions, and others there are who do not hesitate to say that any and all drugs, internally administered, are more or less useless. The serum, the bacterin, and the intravenous injection are the "weapons of choice" in their armamentarium. It must be admitted that there is some justification for such procedure but there are still thousands of physicians who cannot readily secure serum or bacterin or administer, at

the right time (or in the right way), somewhat irritant drugs, intravenously. The treatment of pneumonia in the hospital and the home, therefore, must, of necessity, differ.

Unless it advanced something entirely original, an article of this character would naturally receive scant attention from the hospital internist, and internes are guided entirely by their chiefs; so in the hope that *someone* somewhere may really benefit by this effort, the therapeutics of pneumonia will be dealt with from the standpoint of the doctor who makes domiciliary visits—and stands or falls on the results he obtains.

That something definite may still be said to some such physicians was made evident to the writer a few days ago, when he was asked to see a child of six, supposedly suffering from pneumonia; that is to say, the local practitioner, finding her with a temperature of 103° F., a pulse of 92, and slight

cough, diagnosed "pneumonia", and prescribed thus: R Liq. Potass. citratis; Syp. Cocillana Comp, a.a. fl. oz. 2; Sig: A teaspoonful every two hours.

Now, had the child really been in the first stage of pneumonia, this prescription could have done no earthly good. First of all, there was no cough to control—and that is all cocillana compound could accomplish (except, of course, reduce elimination and upset the stomach), and the amount of citrate of potash was entirely too small to exert a useful influence. Thus, *useless* medication and twenty-four hours delay might well have meant a well-developed and serious condition. Fortunately, there was no *pneumonia* in this case; merely an auto-toxemia of intestinal origin, and the vomiting, white area around the mouth, furred tongue and foul stool should have called very distinctly for thorough elimination *first*, and a definite diagnosis later!

As the etiology, pathology, symptomatology and general management of pneumonia are considered in concurrent papers, no attempt will be made to here touch upon these subjects. It will be taken for granted that a pneumonia either exists or is strongly suspected, and the correct therapeutic procedure under such circumstances desired. Experience has taught some of us, at least, that all rational therapeutic procedure is based upon an understanding of the pathological conditions present in the individual under treatment, and that it is impossible, as a rule, to satisfactorily treat by rote a "named disease". However, certain diseases do present fairly definite, though changing, symptoms from their inception to the *finale*, and among them are the pneumonias.

Pathology the Basis for Treatment

In acute infectious (lobar) pneumonia, with which we are now most interested, we may have a most sudden or more gradual onset, but, under any circumstances, we have, from the very first moment, to deal with (1) bacterial invasion, (2) lowered resistance and, (3) a greater or less degree of localized congestion. Surely at this particular stage the rational procedure is sufficiently obvious. The patient should be placed in bed, given little food, but an abundance of hot fluids, and plenty of fresh air. Renal, dermal and intestinal elimination must be stimulated, and vasodilators are very definitely indicated. Any medicinal agent which will exert a direct bactericidal effect or will aid in neutralizing

or eliminating toxins must prove of service. The thing is to select such drugs as will produce the desired results without exerting by-effects inimical to the welfare of the patient. The wise physician will always remember that it is useless to win, or *almost* win, a battle with bacteria if the patient is almost destroyed in the conflict. One must sedulously protect the human terrain from the first if the invader is to be satisfactorily routed—moreover, the sooner he is driven from his trenches, the better for the territory invaded. No treatment should be instituted that is not definitely designed to cut short a pathological process. If a disease *must* "run its course", why add the insult of medicine to its injury?

A pneumonia, threatening or apparent, may best be treated along these extremely simple lines. The patient, placed in bed in a well-ventilated room, is, if possible, given at once a full dose (1 Cc.) of *Pneumococcus-Combined Bacterin* and, (if an adult) calomel grain 1/6, podophyllin grain 1/6, and bilein grain 1/12 every half hour until four to six such doses have been taken. One hour after the last dose a saline cathartic should be administered. Children will, of course, receive the drugs named in appropriate dosage. The entire body should be sponged (care being taken to avoid chilling) with a solution of magnesium sulphate (one ounce to the quart of water), and methyl salicylate and guaiacol in a lanum and petrolatum base, applied freely over the entire thoracic area. Such application is repeated twice in each twenty-four hours. Robust patients with high initial temperature may be given aconitine grain 1/800, digitalin grain 1/64, veratrine hydrochloride grain 1/128, hourly until the temperature falls two full degrees and diaphoresis occurs. If signs of aconitine sufficiency present before this end is attained, the medication should be stopped and *one* full dose of acetphenetidin or amidopyrine administered. Three hours later, the aconitine, veratrine and digitalin combination should be resumed in one-quarter to one-half the original dosage. This is preferably given in solution.

Dosage for Children

Children will require to be medicated by the so-called Shaller rule, i.e., one such dose (the standard Defervescant granule) for each year of the child's age with one additional, in twenty teaspoonfuls of water—a teaspoonful every half-hour or hourly to effect, remedial or physiological. It might be well to point out here that the "physi-

ological effect" mentioned is that of aconitine, i.e., tingling of the lips and numbness of the tongue and fauces. As very young or seriously sick children cannot express their sensations, it is well to dispense or prescribe only the perfectly safe number of doses which would ordinarily be five to ten. That would mean that a two-year-old child would receive, in five hours (depending upon the frequency of administration), five or (at most) ten fluid drams of the three-granule - to - twenty-teaspoonfuls - of - water solution. For convenience, the teaspoonful and one-fluid dram are considered as identical. It has been proved in thousands of cases that, under such circumstances, there is not the least danger of aconitine poisoning, and the beneficial results are usually so marked that the possibility of "aborting" an oncoming pneumonia has been definitely accepted by those competent, from long bedside experience, to form an opinion.

Guaiacol and Iodine

During the early period—catharsis having been secured—iodine and guaiacol carbonate prove distinctly useful. They may be given together every two to three hours. An excellent formula, originated many years ago by the writer, is: Guaiacol carbonate grain 1, calcidin (iodized calcium) grain $\frac{1}{2}$, nuclein solution mins. 10. Much larger doses of guaiacol carbonate have been recommended, but the smaller amount, at shorter intervals, seems to give equally good or even better results. It should be remembered also that guaiacol inunctions are being given, and so the systemic effect of the drug is easily maintained with the small internal dosage. The less drugs we have to give by mouth, the less probability of gastric disturbance and, sooner or later, impaired nutrition.

Under this medication it is quite possible that what you considered a "pneumonia case" may prove, in forty-eight hours, to be nothing of the kind.

Where asthenia is marked or cardiac conditions are not satisfactory, strychnine arsenate grain 1/120 may replace the veratrine with advantage. This combination (aconitine hydrobromide grain 1/800, digitalin grain 1/60, strychnine arsenate grain 1/120) is the Dosimetric Trinity of Burgraeve. After using either of these formulae for a time the practitioner begins to appreciate what the "synergistic action" of correctly selected drugs really means.

If now, despite treatment, the evidence of lung invasion is obvious, the dosage of

iodine should be increased, an adult being given two grains of calcidin every three hours for two days, at least. The guaiacol carbonate may yield, if the temperature persists in rising, to quinine sulphate, twenty grains being given in the twenty-four hours. Frequently, at this stage there is marked pleuritic pain; bryonin (glucoside from *bryonia alba*) grain 1/64, hourly, speedily affords relief.

Cough

Now, the irritative, useless cough may dominate the picture, and the physician may be tempted to resort to codeine. This is disastrous always, and lobeline sulphate grain 1/200, hypodermically, or lobeloid (a concentration containing the combined principles from *lobelia inflata*) will prove a most efficient relaxant and expectorant. Further, extended clinical tests have proved lobeline to possess a definite inhibition effect upon the pneumococcus. In numerous reported cases, this drug has been pushed to thorough relaxation or even emesis with the most happy results. The therapist familiar with the action of the four alkaloids mentioned will be able to secure results quite impossible of attainment with other agents. Their pharmacodynamics should be studied.

The productive cough of pneumonia should not be stopped, but it must be productive and controllable. Lobeline liquifies the secretions and thereby reduces the violence of the paroxysms and, as a rule, their frequency. Occasionally, however, a definite sedative is indicated, and then solanine hydrochloride should be given "to effect". This drug exerts a sedative action equal to that of codeine but it also possesses diaphoretic and diuretic properties and is non-habit forming. Its superiority to opium or its derivatives is quickly appreciated. Adults may be given grain 1/12 every three or four hours. Children: grain 1/64 to 1/32, at similar intervals. Solanine and guaiacol may be advantageously administered together.

Obviously, any or all of these drugs are given only when the indication for their use are definite. In the ordinary case, carefully nursed and dieted, one can proceed with three or four daily doses of the aconitine-digitalin-strychnine (or veratrine) formula which will reduce the high tension in the pulmonary circulation somewhat and that of the systemic circulation quite markedly. Calcium, iodine and guaiacol carbonate will

limit the infection. Given from the first, various authorities credit them with "cutting short or aborting a large percentage of cases, mitigating all symptoms in nearly all the rest, and failing entirely only in a small proportion". In this writer's opinion, such treatment, fortified by the intelligent use of a bacterin, makes an uncomplicated pneumonia a far from serious disease. At worst, the crisis is materially hastened and recovery progresses with satisfying rapidity.

Few, if any, other drugs are *necessary*, though rapid alkalization may be desirable. Some very successful practitioners push potassium citratis in massive dosage. Where calcium is administered, however, this step is not so essential. The nervous wakefulness of pneumonia usually yields to solanine, but, where this drug fails, barbital, or, better, neonal will produce rest and finally a sleep which refreshes. With neonal the after-effects are practically *nil*. The drug is best administered with a little hot milk after the patient has been attended to at night. The room should be kept quiet and moderately dark thereafter.

When the temperature has remained at or near normal for two days, aconitine and veratrine are no longer indicated, but small doses of digitalin and strychnine should be

continued. The condition of the heart will naturally dictate the frequency of administration. In most well-managed cases the use of glonoin or sodium nitrite will not be required, but it is well to be prepared for emergencies. For this reason, whenever signs of respiratory embarrassment increase steadily, oxygen should be available. Care must be exercised not to mistake the appearance of defervescence for threatened cardiac failure, for, at the crisis, the pulmonary second sound always loses its booming tone by reason of the decreased tension consequent upon beginning resolution. Stimulation is only necessary when weakness of the pulse and of the second sound appear *together* and thus indicate dilatation. Alcohol may be given then to those addicted to its use but ammonium carbonate is a more satisfactory stimulant. It should always be preferred for those of advanced age.

During convalescence, good food, iron iodide or iron citrate with nuclein, intramuscularly, and careful nursing are the essentials. The urine should be examined at intervals and an occasional blood count is desirable. The digestive tract still requires attention, and *mild* laxatives may be necessary. Throughout, the buccal and nasal toilet should be scrupulously thorough.

A TASK. *To be honest, to be kind; to earn a little and to spend a little less; to make upon the whole a family happier for his presence; to renounce when that shall be necessary, and not to be embittered; to keep a few friends, but these without capitulation; above all, on the same given condition, to keep friends with himself, here is a task for all that man has of fortitude and delicacy.—Robert Louis Stevenson.*

Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M.D.

(All communications for the Seminar should be addressed to Dr. Blech, 108 N. State Street, Chicago.)

Postoperative Pneumonia

In accord with the general policy governing this issue, Pneumonia is the subject in lieu of the customary Preachment, and, as this disease is generally conceded to belong to the domain of internal medicine, discussion will be restricted to the surgical aspects of this malady.

Perhaps the most important problem is that of postoperative pneumonia. While it is true that once established the disease does not differ materially from the character seen in all other forms of pneumonia, the surgeon has one great advantage over the internist in that he has the means at his disposal to prevent the disease as a complication of operative therapy, while the best of hygienic measures will not and cannot prevent bacterial infection, at least not in the majority of instances.

That the opportunity to prevent post-operative pneumonia is very frequently neglected may sound like a serious criticism, and such it is intended to be, because, as will be shown, it is based on facts which any one who cares to do so can verify.

To illustrate what I have in mind, let us take any operation of election requiring general anesthesia and observe what is the routine of handling it in most hospitals.

The patient arrives in the hospital the evening before the operation, has his history taken, an interne makes a routine general physical examination, and unless there is something radically wrong which must be looked upon as a direct contraindication to operative therapy, minor troubles are ignored and the operation takes place at the hour fixed, say early the next forenoon after admission to the hospital.

A patient may have defective teeth, and even if the interne should call attention to it, the patient will be advised to have them looked after sometime after recovery, for very few surgeons will consider the advisability of postponing an operation in order to put the oral cavity in a normal condition.

This applies with equal force, perhaps, to mild infections of the nose and throat. A mild bronchitis, nine times out of ten, will be ignored or treated with any available expectorant mixture, administered once or twice before operation and everything is well on the surface.

To cap the climax, the surgeon comes to the hospital, a few minutes before the operation is started, and as, in most instances, the patient is, by that time, somewhat under the influence of an anesthetic, the surgeon sees him only on the operating table when the final toilet is completed.

After the operation, everything else being equal, the surgeon directs that routine post-operative care be instituted, which, properly interpreted, means that in any but "serious" cases the nurse is to sit by, watch the hot-water bottles and see to it that the patient is not given beefsteak for breakfast the next day.

A few days later there is pneumonia. The surgeon shrugs his shoulders. He explains to the family that this is a disease which has no relation to the operation; that pneumonia attacks many people in banks, churches or private residences; and he prescribes suitable medicines, fresh air and the like, according to the best known methods, and leaves the rest to nature.

If any one were to step forward and tell that surgeon that he is to blame for the pneumonia, because he has not exhausted all known measures to prevent it and because his anesthetist does not know the first principles of ether anesthesia, that individual would make a mortal enemy of the surgeon and would be decryd by him as a crank or worse. I have no one in mind and nothing to fear, as my message is entirely impersonal, and I can, therefore, say this:

1.—Postoperative pneumonia is a preventable disease.

2.—The methods of prevention are simple but time-consuming and exacting with regard to details.

Prevention of Postoperative Pneumonia

Let us examine the second thesis somewhat in detail.

A thorough general physical examination by the surgeon himself, or at least under his immediate supervision, should precede every major operation, before the time of operation is set; and no definite arrangement for any operation should be undertaken, except in grave emergency, until every remediable defect likely to be the cause of infection has been removed.

The argument that if such a course were pursued many patients would not go to the hospital is no argument at all. For many years we have refused to operate on patients suffering from an acute attack of biliary disease, and I do not recall having lost even one patient through my advice to delay operation until the acute attack had ceased. While it is true and admitted that many patients must be sent to the hospital at the so-called psychological moment, as otherwise the dread of the operating-table overcomes them and they prefer to go on suffering rather than risk an operation, it is better to lose a small sum occasionally than to forfeit one's reputation as a successful operator.

Heart disease, kidney disease, respiratory disease, grave metabolic diseases and the like, form decided contraindications to operative therapy, and the least that can be expected of any conscientious surgeon is that he allow such patients a few days of rest in bed with the opportunity for controlled, rational therapy, to lessen the gravity of whatever affection is likely to undo the results of skillful surgery.

But even in normal cases—by which I mean that there are no other affections present except that for which operation is to be done—it is well to devote some thought to pre- and postoperative care, beyond the so-called routine, which is NEVER a scientific procedure when degenerating into a mere scheme made to fit all cases.

Breathing Exercises

It is essential that all patients be instructed for a few minutes to take deep breathing exercises by command; that is to say, the physician or assistant or nurse commands "In"—"Out" for every inspiration and expiration, as a sort of gymnastic exercise. This is repeated a few times the evening before operation and once or twice just before the anesthetic or preparatory narcotic is administered.

A well conducted anesthesia results in the patient awakening or beginning to awake as the dressing is being put on after the completion of the suture of the wound. The pa-

tient is returned to bed, care having been taken to avoid chilling while on the way to his room or ward, and the nurse should, without delay, begin to give the commands for the deep breathing exercises. It is astonishing how the apparently unconscious patients carry out the orders—almost like drilled soldiers.

These exercises should be repeated hourly the first day. The ether fumes which have accumulated in the lung are completely removed and the aeration of the lung prevents not only inflammatory reactions but the formation of thrombosis. Having the patient sit up at the earliest possible moment has been recognized long since as a preventative of hypostasis of the lungs.

Old patients on whom I have done perineal operations, including prostatectomies, have never been returned to bed but placed in large arm chairs and kept there until they began to convalesce. Whenever some such innovation is introduced in any hospital, disturbing the serenity of their routine—or rather rut—there will be whispered criticisms and much shrugging of the shoulders; but, after a while, even the routinists sit up and begin to take notice—and mental nourishment.

Of course, we encounter now and then some really serious preoperative problem which will not be easily solved. There may be cardiac and respiratory affections which can not easily be corrected in a few days—or at all. In spite of all precautions, a pulmonary edema will flare up now and then and the patient will perish. In such cases, of course, inhalation anesthesia is decidedly contraindicated and even major operations must be performed under local analgesia.

Graphic Charts

As for the after-care, Dr. Maximilian Kern, the distinguished endocrinologist and diagnostician, made a remark at the last monthly dinner of the Medical Round Table, of Chicago, which should become the mental property of every physician and surgeon.

Dr. Kern charges all teachers of surgery to impress upon all students the importance of the graphic chart. Recognition of this will save many lives. Few surgeons go about making rounds with a stethoscope. If the patient is voiding urine and the bowels have moved and the pulse is below 120, they leave the bedside with a smile of satisfaction. There is some fever, but that is taken as a matter of course.

Now, Dr. Kern insists, a pneumonia can be detected without a chest examination, by merely watching the temperature chart. Every good textbook on internal medicine shows the characteristics of a pneumonia feverchart. Make a copy of one or two, paste them in your note book, and carry them with you, if need be, to refresh your memory. If the chart on the nurse's record sheet closely resembles the characteristics of the ones in your note book, your patient has pneumonia.

But Dr. Kern adds two warnings: First, that many nurses do not know how to take temperatures; and, second, that many more do not know how to make out a chart. In other words, if reliance is to be placed on hospital charts, the attending surgeon should make sure that they can be trusted.

I believe this teaching to be one of the utmost importance, and I, for one, am deeply indebted to Dr. Kern for having urged me and others to emphasize the importance of paying heed to danger signals.

Surgical Complications of Pneumonia

There is another surgical aspect to pneumonia and that is to consider all the possible surgical complications of that malady. When a patient suffering from pneumonia does not get well by crisis or lysis in the prescribed time—I use the word prescribed to mean the time period set by common experience—there is trouble in the pleura, in the lung or the pleural cavity, and sooner or later surgery of some sort will have to be resorted to.

But, in such complications, diagnostic skill is of utmost importance. I have seen excellent clinicians make errors and I have seen good radiographers make pictures of doubtful value and interpret them wrongly.

This is not the occasion to discuss diagnostics. Fortunately, a careful surgeon will never rush into the chest cavity without being sure of his ground. If the time element be wrong—that is, if operation be performed at a time when adhesions have not rendered the opening of the pleural cavity safe, rapid thinking and rapid work will avoid a calamity, especially in the young.

It is seldom that one finds appliances for positive or negative air pressure in hospitals, to be used in surgery of the respiratory apparatus, and they are not of great importance in the affections under discussion. The tendency to conservatism in chest surgery is, in the writer's opinion,

a step in the right direction, and while now and then an extensive thoracotomy will be indicated to overcome extensive suppuration, early intervention and good post-operative care will reduce the need of thoracotomies to the minimum.

Surgical Problem No. 9

Recapitulation.—This problem was published in the October issue. It deals with a man who had been ill with a common cold for about a week, after which he suffered from pains radiating from the gastric region to both sides of the chest. His bowels were regular, sleep normal, appetite good. The pains had no relation to food intake.

When first examined the chest was negative. There was some tenderness over the pit of the stomach but absolutely nothing else. Pulse 87; temperature 99° to 99.4° F.

Medication for "grippe" was given. The patient was seen again later in the afternoon, sitting up, elbows on his knees, suffering excruciating pain. There was then abdominal rigidity and tenderness. Temperature 98° F.; pulse 90. The patient complained of pain in the penis, nonradiating in character. Urine normal; urination free. In the evening, however, the patient could not micturate and had to be catheterized.

The next forenoon temperature 99° F.; pulse 102. Abdomen unchanged. Laparotomy suggested and refused. Consultation with another practitioner that same afternoon resulted in a divided opinion between a ruptured appendix and something else, but the consultant's advice to be operated upon immediately was heeded and the patient's abdomen was opened a little later. Section revealed general peritonitis, involving also the appendix, which otherwise was not pathologically changed; some pus and fluid free in the abdominal cavity. Drainage.

Two days later the patient seemed to be doing well and was given tap water *ad libitum*. The next day the surgeon ordered a dose of castor oil. That same night the patient appeared much worse. The abdomen was excessively tympanitic and he vomited the water he drank. Nevertheless, the surgeon made a good prognosis which was belied by the patient's death after forty-eight hours.

The nurse reported her belief that tap water came away through the drain. No postmortem was held.

The requirement, suggested by the physician who sent in the problem, concerned the correct diagnosis and the question whether the postoperative care was properly conducted.

**Discussion by Dr. E. C. Junger,
Soldier, Iowa**

This problem is very interesting. It is a pity that the author did not give the patient's age, as that circumstance is of some moment in the interpretation of certain symptoms.

The previous history with reference to gastric disturbance, too, is of great interest and should have been at the very first visit. The pains radiating from the stomach to the sides of the chest would have led me to consider gastric or duodenal ulcer or cholecystitis, with or without cholelithiasis. Depending on the patient's age I would have considered gastritis, due possibly to excesses or malignant disease. Gastric crises would have been thought of, also.

During the afternoon the clinical picture had reached a stage past guessing—the clinical entity would have spelt, to me, perforation of some hollow viscus.

Under such conditions my advice to the patient would have been to choose between operation and immediate familiarity with eternity.

The urinary symptoms may have been due to prostatic hypertrophy—again the age of the patient is a material factor in the study—or, as was likely, to the peritonitis affecting that part of the peritoneum which invests the bladder.

There is no doubt in my mind that the surgeon made two serious errors in this case; first, finding no special pathology in the appendix the incision should have been enlarged to search for pathology higher up.

Certainly a perforation somewhere in the upper abdomen would have been found and then could have been properly dealt with. Finally, absolutely nothing should have been given by mouth for some days after operation.

**Discussion by Dr. William G. Parker,
Mt. Vernon, Ill.**

I think this patient had a perforated gastric ulcer. The sudden onset of his major symptoms of pain, rigidity, tenderness high in the abdomen, temperature near normal with pulse becoming faster and out of proportion to the temperature, indicates an acute condition not primarily infectious. Later when the abdomen was opened peritonitis was found. The appendix was not perforated as diagnosed by physician number two. It is likely that its involvement was altogether a part of the peritonic process. There was fluid and some pus present, but no mention of bile is made. The condition of the gallbladder and stomach is not stated, so it is probable that no thorough search was made. Following



Dr. E. C. Junger

drainage the patient improved, but was given much water by mouth, and the nurse says most of this ran out through the drain. This indicates a persistent leak high up, probably from the stomach.

My criticism of the treatment, both pre- and postoperative is this: The first physician did not err greatly in considering the first symptoms as grippal. It is likely that they were incidental. At least they were not illuminating. The urinary retention was reflex—we have all seen retention from abdominal conditions, following laparotomy, etc. The other symptoms demanded exploration, which was refused by the patient. Physician number two was wrong about the appendix. It was not perforated. His operation was incomplete. More thorough

exploration might have disclosed the perforation, as I believe, and it could have been closed.

His after-treatment was bad. The fluids draining away spread infection. The castor oil broke up by peristalsis what protection there may have been from adhesions forming about the part. The patient lived so long as he did because of release of abdominal tension from drainage. His perforation might have been closed and he might have recovered had he had no fluids by mouth, and no castor oil, for a week. Fluids could have been administered by hypodermoclysis, rectal drip, etc. I have seen a gunshot through the body result in recovery with no treatment but opium, when operation was refused. This was of course due to the formation of protecting adhesions—a fortunate outcome. Lastly, perforation of gastric ulcer may occur when there have been none of the classical and chronic symptoms of this disorder.

**Discussion by Dr. H. O. Strosnider,
St. Francisville, Mo.**

The initial symptoms of acute intra-abdominal trouble produced by peritonitis are: pain, nausea, vomiting, muscular spasm or rigidity, thoracic breathing, fever, leucocytosis.

The most common affections are: appendicitis, perforated peptic ulcer, duodenal ulcer, acute pancreatitis, rupture of the gall-bladder and intestinal obstruction.

In acute peritonitis the patient is severely ill; the facies is anxious; he lies prone with knees and chest drawn together; sensitiveness as a rule is most marked in the region of the lesion.

Perforation of peptic ulcer is the first sign of its presence in many instances. Out of 36 patients operated on only 11 gave a history of trouble, according to Foster.

Mistakes have been made, often sad ones, in operating for acute abdominal trouble when the patients had pneumonia.

As regards our problem the blood count would have been helpful. In doubtful conditions the x-ray and examination of the stomach contents often have diagnostic value.

Now that we know the outcome, my diagnosis is that the man had perforation of the small intestine—doubtless a case of duodenal ulcer. It was an error to be content to remove the appendix without searching for the site of perforation in the face of unmistakable evidence that such

perforation had taken place. Dealing with the perforation would have depended on the viability of the intestine. Certainly the introduction of liquids by mouth should have been withheld until the perforation had had time to heal.

**Discussion by Dr. John Clark,
Latham, Kans.**

We are here confronted by a difficult but interesting problem from the very first visit. To me a "cold" is a serious proposition if it does not get well in ten days. The subsequent illness, with the pains radiating from the pit of the stomach to the sides of the chest, excludes grippe, gastric ulcer, disease of the liver and intestinal obstruction.

So far it appears that his "cold" was, perhaps, the result of some upper abdominal focus. Perforated ulcer of the stomach is the first thing that suggests itself. It need not have made itself known before. A minute perforation could have allowed enough gastric juice to escape into the free peritoneal cavity to produce a mild peritonitis which apparently requires no surgical relief. A few days later the case had progressed far enough to insure a lethal ending.

When the second physician was called in the evidence would, of course, have ruled out acute hemorrhagic pancreatitis and pneumococcal peritonitis, complicating an original grippe.

Embolism or thrombosis of the mesenteric vessels, rare as this condition is, would have been weighed, but would have been ruled out because of the rather mild beginning of the trouble.

The mildness of the attack in the beginning with the fact that there was no loss of appetite or interference with the function of the bowels would have suggested the possibility of a perinephritic abscess, rupturing into the abdominal cavity. While the evidence for this condition is very slender, I am inclined to the belief that the patient may have died from just that affection.

Editorial Comment

None. The discussions have been so excellent that it would be a waste of time to go over the case. Dr. R. is a splendid physician, whose name I would gladly publish, were it not for the palpable desire on his part not to involve the colleague who did the operation in any controversy.

This is the last issue for 1925. It has been a pleasant as well as an unpleasant year for me, as editor of the *Seminar*. I have received from Europe and other countries, letters of appreciation of my efforts to arouse the general practitioner and occasional operator to the need of scientific thinking. I have been criticized for my colloquial style and an eminent writer has told me point blank that I could get more glory by preparing technical contributions. *Chacun à son goût!* I have learned to like this work and many readers have become warm personal friends; and if I were to publish a surgical magazine I do not know but what all critical discussions would be phrased colloquially. One can be scientific without being cold and formal!

The January number will contain a review of progress in surgery during the past few years. We will resume our surgical problems with the February, 1926, issue, and that number will contain, also, a number of interesting case reports sent in by several of our friends.

If there is anything to make the *Seminar* still more interesting, no one will be more glad to hear about it than I, and an informal letter will please me and, if suitable for publication, will benefit all of us.

With sincerest wishes for a contented new year to all friends of the *Seminar*, I remain,

GUSTAVUS M. BLECH.

IN ALL EFFUSIONS into the pleural cavities, watch for displacement of the apex beat. The more it is displaced, the more urgent the need of removal of the fluid, and the greater the danger of sudden death while doing so.

ALWAYS AUSCULATE and percuss over the spot at which you are going to insert your needle immediately before puncturing in exploration or aspiration.

ALWAYS TURN the patient toward the side on which you are working. When this is impossible, place him either on his back or on his face. Never hamper the working of the sound side.

BE CERTAIN that someone is watching the pulse (better blood-pressure) and respiration, and never evacuate fluid rapidly or too much at one time.

ALWAYS REMEMBER to stop aspirating if much pain is complained of or if serious coughing should occur.

ALWAYS BE SURE that your needle and all apparatus are in order before inserting—this may be shown by allowing a little sterile water or saline to be sucked up by it.

IN CHILDREN, or in very bad cases of empyema, it is much better to quickly plunge the knife through an intercostal space than to resect; one stroke does it, and that alone may be sufficient to cure—at any rate it will cause such improvement that a few days or weeks later you may resect without killing your patient.—C.

—Bernays: "Golden Rules of Surgery".

Clinical Notes and Practical Suggestions

Pneumonia Treated With Active Principles

SIR WILLIAM OSLER has said, "The best diagnostician is he who can think of the most possible diseases." It is to be assumed that every Doctor of Medicine can diagnose pneumonia in all its various forms.

If not in bed when first seen, such a patient should be put there and we must see to it that he has a well-warmed room, the air being kept constantly moist, and all talking, tobacco smoke and other pulmonary irritants forbidden.

We have in pneumonia typical asthenic cases which, as a rule, need no drastic defervescent treatment; although sthenic cases do occur.

The fever and other elements of the disease tend to weaken the heart; nevertheless, in most cases, this organ is capable of accomplishing its task if not too much interfered with. Of all sources of heart weakness, the fever is the most important.

If the pulse is strong and full after you have cleaned out the *primæ viæ* with calomel, podophyllin, bilein and strychnine, followed by saline laxatives, and established intestinal antiseptics with the sulphocarbolates of lime and soda, you have your patient in a fair way to respond to the defervescent compound of aconitine, digitaline and veratrine; so that, instead of a full, bounding pulse and wild, fighting delirium, requiring heroic measures, you can control your patient with small, oft-repeated doses of the above-named active principles. I have seen the pulse in a well-developed case of pneumonia brought down to forty beats per minute with old-fashioned "Norwood's tincture" of veratrum viride.

Fortunate is the man who knows when and how to change from the defervescent compound to the "dosimetric trinity," substituting the arsenate of strychnine for the veratrine. How many times have we heard of a patient dying from pneumonia because "his heart gave out"? Why wait until the heart is worn out before we use strychnine?

If you keep your patient's pulse below one hundred beats per minute, the heart will hold out until he gets well.

There are some who still swear by the old-time treatment with quinine, morphine, camphor and whisky. The simple fact that alcoholic cases are notoriously serious ones would, to a thoughtful mind, preclude the use of whisky. Osler has said that pneumonia is a self-limited disease which cannot be cut short by promiscuous drugging, which often does more harm than good; but we, who have used the active principles thoughtfully, feel sure of our ground in the treatment of this disease.

I remember working with a woman twenty-seven years old, suffering from measles, complicated with pneumonia of both lungs, whose pulse was 140 beats per minute and whose temperature had been 104° F. for a week. This patient passed the classical crisis and was unconscious; no perceptible pulse at wrist for an hour. As suggested by Wood and Fitz, for "Collapse at Crisis," we used atropine and glonoin, 1-250 grain of each hypodermically, giving a dose every fifteen minutes, and the patient showed no signs of having felt the needle until the fourth puncture when she rallied and lives today, due, I am sure, to the persistent efforts of the young doctor who was trying to keep life in the patient until the arrival of her father.

I have purposely refrained from going into the etiology, diagnosis and pathology of pneumonia. We often hear the question asked, "Do successful physicians in different parts of the country treat their pneumonia patients all alike?" Not exactly! There are many ideas and many remedies are suggested. To my mind, the four dominant remedies in the treatment of pneumonia are: aconitine, digitaline, veratrine, and strychnine arsenate.

Study your cases carefully and if still in need of remedies remember Castro, "For

the infectious element and the pneumococcus, calcium sulphide; for the inflammatory elements, aconitine; for the chill, strychnine; for dyspnea, digitaline; for violent coughs, codeine; for difficult expectoration, scillitin, antimony arsenate and emetine; for delirium, caffeine, camphor, hyoscyne and hyoscyamine."

Convinced that we learn more from our failures than from our success, I will report a few failures.

In March, 1896, a colored woman, seventy-six years old; passed the crisis—and the River Styx. This was my first fatal case of pneumonia. In February, 1902, in the same house, another colored woman, about seventeen years of age, had pneumonia involving both lungs and probably an abortion. She certainly had uterine hemorrhage, but no examination of the uterus was permitted. She died, in spite of our efforts. In December, 1906, still another colored woman, age thirty-seven, with double pneumonia, complicated with valvular heart disease, also died.

In looking over these three fatal cases of pneumonia, we find that all three died on the seventh day of our treatment, indicating that the pneumonia probably had two days' start of the physician in each case, as all died just after the crisis was reached. Another significant feature is that all three were colored patients. We can not expect the same intelligent cooperation by the colored race that we receive from the more enlightened white people.

On January 8, 1914, I was called to see Mrs. B., white; age seventy-six; pneumonia; seventh day of disease. Fourteen people were in the same room with my patient. They had made their prognosis. "It could only be fatal." After clearing the room and permitting the patient to receive a little fresh air, she rallied and made a game fight for another two days and nights. However, the "wake" was repeated and my first white patient "took the count" and went to "that bourn whence no traveler ever returns."

Some successful cases that appealed most to me were twin boys, 10 years of age, in same bed, each with a pulse of 140 and temperature 104° F.; brick-dust and prune-juice sputum all over the floor on either side of the bed. I gave "dosimetric trinity" every fifteen minutes all night; every thirty minutes next day; and, presto, they were "out of the woods" and ready to get up.

Another patient, a boy 22 years old, was cyanotic, pulseless, pupils widely dilated,

and great drops of cold sweat all over his forehead. He had just expectorated half a teacupful of blood. In answer to my question, "Are you frightened?", he answered, in a hollow, hoarse whisper, as from the grave, "No, sir." I immediately gave him 1-100 grain of atropine hypodermically and repeated the dose in four hours. A tank of oxygen was also used. The patient recovered.

In my thirty-one years of hard country practice, I have probably met every conceivable form of pneumonia, and possibly as many other troubles, complicated with pneumonia, as it falls to the lot of ordinary physicians to meet. For example; pertussis and pneumonia; typhoid and pneumonia; some of our worst cases have been measles and pneumonia; some cases of acute Bright's disease and pneumonia; "respiratory influenza" (war diagnosis) and pneumonia. It does seem that I have run the gantlet; but, given an even start, a fair field and no favors asked, I fully believe that all pneumonia looks alike to the doctor who pulls off his coat, rolls up his sleeves and fights the trouble as though he were fighting fire. We are forced to conclude that a disease that will kill a patient in from three to nine days demands all of our attention, and he who wins out must be ever on the alert.

S. D. WETHERBY,

Middletown, Ky.

PATHOLOGICAL AND LABORATORY FINDINGS IN LOBAR PNEUMONIA

Lobar pneumonia is a general infection with local involvement of the lungs.

It is usual to describe the process in the lungs in three stages.

1.—*Stage of Engorgement:* The lung is of a deep red color, edematous, and slightly firmer than normal. Blood-tinged serum exudes from the cut surface. There is crepitation and air is still present. Under the microscope the air spaces are seen congested and in the alveoli there is much serum, few leucocytes, red cells, epithelial cells and fibrin. This stage lasts a few hours.

2.—*Red Hepatization:* The lung is solid and airless and of a brown-red color. The cut surface is dry and of a fine granular appearance, which is due to fibrin plugs in the air spaces. Microscopically: alveoli are filled with fibrin net-work in which are leucocytes, red cells and epithelial cells. There is a similar exudate in the terminal

bronchi. The walls of air spaces and tissue about vessels and bronchi are edematous and infiltrated by leucocytes. Blood vessels are compressed, but are pervious. Thrombi occur occasionally.

3.—*Gray Hepatizations*: The color is grayish white. The surface is more moist and granular and plugs are more prominent. Large amount of turbid fluid can be scraped from the surface. As resolution begins the consistency diminishes, plugs disappear, and the surface is bathed in a purulent fluid. Microscopically: air spaces are filled with leucocytes; fibrin becomes granular and is obscured by leucocytic infiltration; red cells appear as shadows. As resolution advances fibrin and red cells are dissolved; epithelial cells and leucocytes become fatty. The phagocytic cells become prominent and repair of epithelium is evident. The lung becomes softer, and gradually the normal appearance is resumed. The bulk of the exudate is removed by absorption-resolution; by autolysis of the exudate, due to proteolytic enzyme.

All these several stages merge into one another, so that in a lung all may be going on at once.

In about 51 percent of patients the right lung is involved; in about 32 percent the left lung; and in about 17 percent both lungs are involved.

Other Modes of Resolution: In chronic interstitial pneumonia, or fibrosis or organizing pneumonia, the exudate remains in the air spaces. Nature makes an effort to remove this exudate. The cells of the walls of the air spaces proliferate and new connective tissue cells are sent out in fine protoplasmic processes to penetrate the exudate. Finally, the exudate is replaced by new fibrovascular tissue. The involved portion of the lung becomes a dense, firm, fibrous mass.

Complications of resolution are abscess and gangrene.

Laboratory Findings: One of the most evident manifestations of lobar pneumonia is the sputum. There may be 100-300 Cc per day or a case may run its course without any. At the onset the sputum, as a rule, is red; if markedly hemorrhagic it should cause a suspicion of tuberculosis. In other cases there may be white mucus even for four or five days. In most cases, after one to three days, there is typical "rusty sputum" which is homogeneous and tenacious. The color comes from the pigment of the hemoglobin, with some free

red cells. On extension of focus in the lung there is fresh blood, or an increased amount in the sputum. In some cases the sputum is orange yellow or lemon yellow or grass green.

Soon after the crisis the sputum stops or becomes mucopurulent. Later, it is more abundant, and becomes white mucus. There are a great number of microorganisms in the sputum. It should be examined for predominating variety. Much information as to prognosis, etc., can be gained from this examination.

Rarely the exudate from the bronchi may assume the form of fibrin casts, when, perhaps, casts of the whole bronchial tree may be expectorated.

Blood changes in Lobar Pneumonia: The most pronounced change occurs in the leucocytes. Six or eight hours after the chill the leucocytes are increased, with the maximum at the crisis. The increase may be 20 or 30,000 or even as high as 100,000. As to the significance of the leucocytosis, Cabot divides the cases into three groups:

1.—Those with good resistance, mild infection. There need be no leucocytosis. These cases recover.

2.—Those with good resistance, severe infection; leucocytes high. These cases recover.

3.—Those with poor resistance, severe infection; no leucocytes. Usually fatal.

The leucocytes fall at the crisis—sometimes two or three days later. There is no constant relationship between leucocytosis and the temperature curve. In cases of delayed resolution the leucocytosis continues.

The urine in lobar pneumonia is usually reduced in amount to one-half of normal; in consequence, it is highly colored, with high specific gravity. In about one-half of the cases there is albuminuria, with perhaps a few hyaline casts. These clear up shortly after the crisis. In involvement of the kidneys, there is retention of urea and uric acid and the usual findings of nephritis. Sodium chloride diminution due to blood concentration occurs in the milder conditions.

Bacteriology of Lobar Pneumonia: The pneumococcus appears in a high percentage of cases. In a few, Friedlander's Bacillus, B. influenza, streptococcus and staphylococcus occur; even colon bacilli.

The best laboratory means of diagnosis is the blood culture.

In a series of cases Cole obtained 30 percent of positive blood cultures. In the

positive cases the mortality was 55 percent. In the negative cases 8 percent.

There is an immunological difference between pneumococci, so that they fall into four groups.

Groups 1 and 2 are the epidemic variety.

Group 3 is heavily encapsulated and produces a mucus-like material.

Group 4 are the ordinary mouth organisms that become virulent.

Blood Chemistry of Pneumonia. Cyanosis is used as a prognostic sign. It is due to the incomplete saturation of venous blood with oxygen in the lung. The normal arterial unsaturation is 5 percent—venous unsaturation is 25 percent.

In fatal cases of pneumonia the arterial unsaturation is very high; may be 70 percent—venous 85 percent. In most patients there is a slight decrease in blood chlorides, which are much diminished in severe cases. There is impairment of renal function in severe pneumonia. At the crisis there is an increase of the nonprotein nitrogen, followed by increase of uric acid. When urea nitrogen is over 20 mg. there is creatinin retention, which may be 5 mg. or more. Death in these cases is due to severe renal impairment.

FRANK COHEN.

Quincy, Ill.

Reprinted from *Quincy Med. Bul.* for October, 1925.

THE PHYSICIANS' HOME (A Good Christmas Idea)

Announcement has been made by President Robert T. Morris, M.D., of The Physicians' Home, Inc., that an endowment campaign has been started by the Directors of the Home for the purpose of raising funds to endow a *national home* for aged and incapacitated physicians who are left without financial resources in the autumn of life.

The sum sought for the home has not yet been determined, but it should run into several millions of dollars, so as to guarantee the upkeep, through interest, of the national home and the several smaller units to be placed in the different states as may be determined later.

The Physicians' Home, Inc. is not an experiment in any sense. Four years ago one unit was established at Caneadea, N. Y., through the generosity of Dr. Stephen V. Mountain, who generously donated the property and building, and it has met with

such great success that the directors believe it their duty to enlarge the scope of the enterprise, because of the large waiting list which they are unable to accommodate at the Caneadea Unit. (See *CLINICAL MEDICINE* for February, 1925, page 109.)

Dr. Charles H. Mayo, of Rochester, Minn. has given his unqualified endorsement to the movement and is heading the Committee of Sponsors who will have the campaign in charge. Other prominent physicians and laymen will also serve as sponsors.

This is not intended as a pauperizing movement, nor is the campaign to be one in which there is to be a "sob-element". It is rather to be a dignified effort on the part of the profession itself to take care of its own needy ones and to ask the cooperation of the generous and well-to-do layman and woman to help.

One of the features will be a laboratory where the old physician may continue his investigations and study, and thus give him an opportunity of employing head and hand and heart for the advancement of his profession.

Another feature of the Home will be provision for the wife or other dependents of the physician so that families may not be broken up.

In no case more than in this appeal can one more definitely give twice by giving what he can quickly. The sooner funds are received the sooner the enterprise will be serving the deserving physicians.

All checks should be drawn to the order of "The Physicians' Home, Inc.," and should be forwarded to Dr. Albert G. Weed, National Treasurer, 22nd floor of the Times Building, 42nd Street and Broadway, New York City.

CUTTING PNEUMONIA SHORT

I should like to emphasize the possibility of cutting short the course of a case of pneumonia. This can be done if the case is seen early enough.

Immediately upon the occurrence of the initial chill, and in the presence of sharp pain in either chest or abdomen; rise of temperature and pulse rate; sensation of weight in the chest, with or without cough; and auscultation showing sounds of slight crepitation on deep inhalation, I administer by mouth, at half-hour intervals, 1/800 grain of aconitine and 1/128 grain of strychnine arsenate, and continue this

medication until the temperature and pulse approach normal, and diaphoresis is produced.

If, in addition to this treatment, a saline purgative is given and the entire chest is kept anointed with camphorated oil, I believe that a large percentage of primary pneumonias will disappear within 24 hours, with the subsidence of pulmonary congestion and restoration of the circulation to normal.

I suppose the causative organisms of the disease are prevented from multiplying by being swept along in the blood current, which is kept active by the drugs suggested, instead of being permitted to stagnate in the remote areas of the body.

The blood and tissue fluids of every healthy person contain sufficient antibodies to neutralize the effects of pneumococci and other microbes which are continually gaining access to the body, and, if these can be met and conquered before they become too numerous, the battle is won.

GEO. ACHESON,

St. Martin's, N. B., Canada.

TREATMENT OF PNEUMONIA

I never temporize with a case of pneumonia. I go after it as if it were a fire in my own home. I always get good results with the vaccines, but, you see, I *give them*.

Here are two case reports which tell my story and the results I almost invariably obtain:

Case 1.—Mr. L. G. Age 46. Laborer. Came from work Saturday noon feeling so ill that he had to rest three or four times in a walk of four or five blocks. Between four and five o'clock P. M., I was called and asked to hurry as he was thought to be dying. I found him on the floor gasping and choking and very cyanotic. Pulse not perceptible; heart barely so with the stethoscope; both lungs full except left upper lobe; temperature 99° F. I gave 1 Cc. of adrenalin at once. In an hour I gave an active cathartic and one capsule, every hour, of quinine salicylate and hydrobromide, 2½ grs. of each, for six doses. After the six doses of quinine, I gave 1 Cc. of Respiratory Vaccine. Next day he received six more doses of the quinine from 3 to 8 P. M., after which he received 1 Cc. of the vaccine. This treatment was repeated until he had received five doses of the vaccine, after which he received three quinine capsules in the afternoons and the bowels were kept loose. In ten days he was up and in two weeks went back to work.

Case 2.—Mrs. J. L. Age 36. Came to visit a sister after her case had been diagnosed pneumonia by a physician in a neighboring city. When I saw her, both lungs were full of moist and crepitant rales;

breathing was very difficult; pulse 120 and weak; temperature 101° F. I had the respiratory vaccine with me and gave her 1 Cc. at once; gave a brisk purgative, and ordered the quinine as soon as the prescription could be filled. Except for the adrenalin she received practically the same treatment as the other patient and in a week was well, except for recuperative tonics which she needed for some time. I used the U.S.P. Compound Cathartic Pills for the purgative and a mild laxative thereafter.

AMOS T. FISHER,

Cleveland, Ohio.

LEAKING RADIATORS

Some years ago, Davis suggested, in the *Med. World*, the following procedure for stopping radiator leaks:

Fill the radiator nearly full of lukewarm water and add 12 ounces of sweet milk; let stand 15 minutes; start the engine and let it run until the water is well circulated; stop the motor for 15 minutes; do not drain off the mixture. This may be repeated in 48 hours if necessary, but more than two repetitions are never required.—Ed.

FRIGHTENED "FLAPPERS"

Many grown-up folk look back upon youth as the happiest stage in life's pilgrimage. This is said to be the "careless and happy" period; but, it is also a time of emotional conflict, bewilderment, perplexity, and doubt. For the young girl, life is beset with a vague fear. Freed from "scholastic trammels", as W. S. Gilbert writes, each girl "a little bit afraid is, wondering what this world can be." The boy experiences the same doubts and dreads as the girl, but in a lesser degree, and his occupation and his sport leave less time for introspection and day-dreaming.

The study of the adolescent girl is highly important, profoundly interesting, and fraught with pathos for the parents and teacher. Careful observation and reflection upon the shy confidences of girls proves that fear is a dominant emotion from the age of 12 to 20. It is this indefinite, but frequently acute, dread of life's realities that produces a number of mental and nervous symptoms characteristic of girlhood and the period of transition to womanhood.

Youth with its new emotions and changes in mental perspective often comes with a startling suddenness. At the outset of adolescence, the great majority of girls become reserved or very secretive concern-

ing the problems that constantly perplex them.

The unanswered questions are complicated by the girl's attempts to substitute fantasy for fact. She becomes moody, "shut in", irritable, and sometimes profoundly sad. Parents say, "I can't tell what is the matter with the child". When the secret anxiety increases and becomes morbid, hysterical signs appear. There is a loss of emotional control, fits of weeping, outbursts of temper, keen dread of life, and other symptoms usually associated with nervousness.

Miss Phyllis Blanchard, an American doctor of philosophy, has rendered a splendid service to parents and educators by recording the main conflicts of girls in their 'teens, as related by a number of average normal pupils in college. The tendency to giggle, so common among girls of the later school age, is not a sign of hilarity but an indication of a conflict feeling. Blushing, stuttering, and spasmodic muscular movements all denote the existence of emotional problems. We may assume from Miss Blanchard's investigations that the average "flapper" is not so care-free and exuberant as she seems. She is frequently more than "a little bit afraid", and in some cases she is in peril of nervous invalidism in later life.

A host of parents and teachers seem to have completely forgotten the fact that burning problems occupy the thought of every adolescent of normal intelligence and imagination. We are, indeed, singularly lacking in the art of sympathetic candor in the training of our girls.

B. SHERWOOD-DUNN,

Nice, France.

DIAGNOSIS OF INTERLOBAR EMPYEMA

"To determine the presence and location of pus in the lung offers certain technical difficulties which are not easily overcome. However, with a history of some causative factor and a clinical picture indicating localized lung involvement, a careful examination and a competent x-ray investigation should make a diagnosis in many cases. Yet, in the presence of a small unruptured abscess or interlobar empyema the findings may be so obscure that one is unable to arrive at a positive conclusion. The etiologic factor may be a doubtful one, the x-ray may fail to show the lesion and even

the aspirating needle at times will not locate the pus. If efficient and intelligent treatment is to be instituted, a positive diagnosis must be made before rupture has occurred. Repeated x-ray examinations and aspirations, with the needle thrust in different directions, should locate the pus in every instance if rupture does not take place early."

J. R. HARGER, *Clinique*, May, 1925.

PNEUMONIA CATECHISM

Q—Is pneumonia on the increase or decrease?

A—It is on the increase due to "civilization" factors favoring its spread, especially crowding, also to certain weakening influences of modern life which heighten susceptibility to the disease. More persons are now saved from the infections of childhood to become victims of pneumonia in later life.

Q—What months of the year is it most prevalent?

A—Winter and spring months, especially February, March and April.

Q—Is pneumonia common in children?

A—It is common in children under six years of age; between the sixth and fifteenth years the predisposition is less marked but it increases with each subsequent year. Pneumonia often attacks the strong and robust in early adult life, but under these circumstances the chances of recovery are good.

Q—Does one attack of pneumonia make one immune from further attacks?

A—No. In fact, one attack predisposes to succeeding attacks.

Q—What is the chief cause of pneumonia?

A—The pneumococcus germ.

Q—What are the predisposing causes?

A—Cold, wetting and chilling are generally regarded as important predisposing causes. This is not necessarily accounted for by the chilling of cold, moist air for it has been shown that a low relative humidity may lead to a high death rate. These may favor self-infection or may lower the resistance of the lung tissue. Fatigue, or some unusual exertion, also plays a part here.

Q—Are there any other causes of pneumonia?

A—Anything which tends to reduce vitality predisposes to pneumonia, such as dissipation, loss of sleep, overwork, worry, poor or insufficient food, lack of exercise, alcohol, colds or excesses of all kinds, and

the injurious effect of excessively dried and warmed air, and sleeping in warmed rooms.

Preventing Pneumonia

Q—What preventive measure should be taken against pneumonia?

A—Since pneumonia is usually spread by the mouth and nose secretions, crowding must be discouraged. Persons who sleep, work and play together have every opportunity of spreading the disease. That is why pneumonia is common in camps, schools, prisons and industrial establishments.

Cold baths, regulation of temperature and ventilation, common sense habits of living, sleeping with open windows or in the open air, as well as oral hygiene, are useful preventive measures.

Reprinted from *Popular Health* for October, 1925.

[Here is some material, written in a simple style, which you can pass on to the families you serve. If they carry out the suggestions herein, you may have less cases of pneumonia to treat, but you will gain friends by offering them a real constructive service, in line with modern ideas in preventive medicine.—ED.]

PHYSIOTHERAPY IN FRANCE

I had a personal interview recently with Prof. Dr. d'Arsonval, at the college of Medicine.

Many conditions considered, in America, as not amenable to electrotherapeutic treatment are so treated, in France, with highly satisfactory results. Ionization is used in treating keloid. Diathermy and the d'Arsonval current produce good results in diabetes. Contraction-producing currents (sinusoidal, surging galvanic, etc.) appear to help in Parkinson's disease. All these methods are well recognized here.

J. E. G. WADDINGTON.

Paris, France.

UNCONSCIOUSNESS AND CONVULSIONS

I will appreciate it very much if you will publish this case for discussion in *CLINICAL MEDICINE*, as I am not sure as to the correctness of my diagnosis.

On the evening of October 9, 1925, I was called to see a patient, Mrs. M., age 44; mother of five children. She had very seldom been sick in her life, until recently.

She gave the following *history*: declining health for the last twelve months. On October 6 she helped her husband cut a field of corn, doing a very hard day's work. The next day, she complained of pains in back and limbs, which continued to get worse so that she could not rest at night.

On *examination*, I found her suffering greatly with pains in back and limbs; slight headache; temperature 101° F.; pulse 84; constipation; frequent urination. Heart and respiration were normal; no vomiting; mind clear; menstrual periods regular, last menstruation September 26, no pregnancy.

I prescribed for her and her husband gave her three tablets to relieve constipation which was all the medicine she took, as she had a convulsion and became unconscious at 12 o'clock that night.

I was called to see her again the next day, and found her in an unconscious state and having convulsions. Temperature 102° F.; pulse rapid; perspiring freely; rapid respiration. I gave her ¼ gr. morphine, hypodermically, and in fifteen minutes her muscles relaxed. An enema produced no marked results. Cold applications to forehead were made.

I called to see her next morning at 10 o'clock, October 11. She had rested fairly well the night before, but was still unconscious and having slight convulsions. Temperature 103° F.; pulse rapid and growing weak; breathing through her mouth with some rattling in throat; very restless at times; kidneys acting four or five times a day.

I was called again to see her the same evening at 6 p. m., and found her in a dying condition, lying across the bed with her head very low; mouth breathing; bathed in perspiration; temperature 105.5° F.; pulse rapid and weak; unconscious; no swelling of feet and legs. She died at 8 p. m. the same evening. If this is not a case of uremic poisoning, what is it?

I certainly will appreciate it very much if some brother practitioner will point out to me my mistake.

C. W. BRABSON,

Telford, Tenn.

[It is quite impossible to say with any certainty what was the cause of death in this case. There were certainly symptoms of uremic poisoning, but, in the absence of any report of a uranalysis, we can not be entirely sure. In fact, there is nothing on

which to base a diagnosis except the convulsions and the coma.

Dr. Brabson is practicing in a district where access to a laboratory is frequently impossible, but this emphasizes the point that it is necessary for all physicians, in such circumstances, to carry the very simple and inexpensive apparatus necessary for making the ordinary urinary tests for albumin and sugar, and *make these tests at the bedside*, in all suspicious cases. Inspection will usually show the presence of pus or blood or both.

A blood pressure apparatus should also be a part of every doctor's armamentarium, and readings obtained by such an instrument would have been helpful in this case.

We are not told the condition of her pupils or her deep and superficial reflexes, nor whether or not there was paralysis or paresis of any muscle groups. It would also be helpful to know the duration, severity, frequency and type (tonic or clonic) of the patient's convulsions.

The temperature would tend to indicate the presence of an acute inflammatory process, somewhere.

The most probable diagnoses, based on the meager history, are: cerebral hemorrhage, cerebral syphilis or uremia.

We shall be glad to have this case discussed from the standpoint of diagnosis or—especially—treatment.—Ed.]

QUININE IN PNEUMONIA

It was while a freshman in the University of Michigan that I first learned of the usefulness of quinine in the treatment of pneumonia.

Prof. A. B. Palmer was then our lecturer upon Pathology and Practice of Medicine and was also dean of the medical department.

In his early years, he was in general practice, when Michigan was in its pioneer days and when, like all pioneer states, it was in the grasp of malaria. Whatever else might be the matter with his patients, they were almost surely also the subjects of malaria. To eradicate this complication, he, as a rule, prescribed large doses of quinine. Soon he observed that, when his patients happened to have pneumonia also, the pneumonia very soon became a thing of the past. Very naturally, the question arose in his mind whether or not it was the quinine which was bringing about these unlooked-for recoveries.

He determined to try it out, so, when having patients evidently without malaria and with pneumonia, he prescribed large doses of quinine.

Almost without exception, within two to three days, the patient began to exhibit symptoms of recovery and soon entered upon convalescence.

At that time, pneumonia was not known as a germ disease and Doctor Palmer did not know that the quinine was acting as a germicide, which it undoubtedly was doing and which Johns Hopkins University has since demonstrated.

In addition to the quinine, Dr. Palmer prescribed mild laxatives, preceded by small doses of calomel; also sufficient morphine or Dover's powder to allay cough and pain.

It must not be forgotten that the quinine must be given in *active doses* and repeated at two- or three-hour intervals. Fifteen to 20 grains should be given at each dose until 60 grains are taken. It should then be discontinued for 12 to 15 hours and again prescribed in smaller doses. It should be remembered that quinine in any reasonable quantity is entirely nontoxic. In severe cases in *any stage* of the disease and in very young patients, I have prescribed it in much larger doses than recommended by the textbooks. In such patients, I give it in chocolate, well-shaken.

It should be remembered that the effects of the quinine are frequently not shown before twenty-four to thirty-six hours, after which the symptoms ameliorate.

With the active use of quinine, the serums and vaccines will be found to be unnecessary.

I have used the above treatment since graduation, even in cases violently and dangerously ill, in the second and third stages. I have seen rapid improvement and recovery in both young children and feeble old age.

V. E. LAWRENCE.

Ottawa, Kansas.

CONVULSIONS IN PNEUMONIA

I wish to record a case which differs from any other which I have seen in 18 years of practice and which may be of interest.

Case: N. F.; Female; age 27 years; housewife. *Personal history:* Scarlatina at 10 years, with right otitis media which has drained most of the time up to the present, with total deafness in the right ear. Frequent attacks of sore throat; tonsils present. An x-ray of the right mastoid, in 1923, showed it to be very sclerotic.

Repeated ultraviolet irradiations have now caused cessation of the aural discharge and healing of the drum membrane. From 1918, there were repeated attacks of nasal pansinusitis, until bilateral exenteration of the ethmoid and sphenoid cells was done in April, 1923, and was followed by slow recovery and an ultimate return to health. Facial erysipelas in April, 1925.

Present illness: On September 30, 1925, I was called because of what appeared to be acute rhinitis with headache, which had been present for 3 or 4 days. At 2:00 A. M., October 1, she had a convulsion, and by 6:00 A. M., when I arrived (the distance was eleven miles), she had had ten general convulsions. These convulsions were somewhat more violent upon the right side, and the patient was deeply comatose between them. Nystagmus was present. The neck was not rigid and Kernig's sign was absent.

Auscultation showed no abnormal sounds in the heart or lungs. The rectal temperature was 100.2° F.; pulse 112 and regular; respirations 20. The blood pressure was S. 120, D. 80. Urine, obtained by catheterization, was free from albumin.

At 7:00 A. M., a well-trained eye, ear, nose and throat specialist was called in consultation, and he reported that the retinæ were normal. A spinal puncture gave no diagnostic assistance, as the fluid appeared to be normal. There was no leucocytosis at 10:00 A. M., on October 1.

About ten o'clock, the patient became semiconscious and was able to use the toilet. She answered questions slowly, and complained of no headache or other pain.

She remained rational until 2:00 P. M. when convulsions recommenced and she had ten more before 6:00 P. M., after which there were no more until the end of the case.

At 7:00 P. M., her temperature was 101° F.; At 11:00 P. M., temperature 102.6°; pulse 130; respirations 35.

At 6:00 A. M., October 2, she was stuporous; temperature 104°; pulse 148; respirations 32. At 8 A. M., she became conscious and rational; and was able to drink water. The fingers were cyanotic. Blood pressure, S. 130, D. 60. At 9:00 P. M., the temperature was 102.6°; pulse 130; respirations 40; and a few râles could be heard over the lower lobe, left lung, posteriorly.

At 10:00 A. M., on October 3, the temperature was 103°; pulse 122; respirations 36; blood pressure, S. 125, D. 75. She was rational and drank water freely; the bowels moved; cyanosis was less; râles and dullness over lower left chest, posteriorly; no headache or other pain; no cough; neck not stiff. The urine was again found to be normal; but the leucocytes were 22,000, with 80 percent polymorphonuclears.

The diagnosis of lobar pneumonia was now clear. She died of cardiac failure 98 hours after the first convulsion. *Diagnosis.* At the onset, the differential diagnosis appeared to be between brain abscess or acute meningitis, from the mastoid; uremia; or some unknown infection. It was a diag-

nostic problem. *Treatment* was symptomatic and along the usual lines. Caffeine citrobenzoate was given intravenously when cyanosis was marked.

I have seen pneumonia, in children, ushered in by a convulsion, but I have never before seen it in an adult. The consultant stated that he once saw a case of smallpox begin in this way.

In my opinion, this infection was so virulent that the patient was doomed from the start, no matter what might have been done.

D. A. HERRON,

Alta, Iowa.

[This is indeed an interesting case, and we will be glad to receive comments from our readers.]

To us, it appears like a secondary pneumonia, resulting, possibly, from the aspiration of stomach or mouth contents during the convulsions, by a patient whose resistance was weakened by a long toxemia and an acute process somewhere in the brain; or there may have been pulmonary embolism from thrombosis of the lateral sinus.

The history and the presence of nystagmus suggest a labyrinthine involvement or, possibly a cerebellar abscess.

It seems probable that, under the circumstances, little or nothing could have been done to change the outcome.

This is a case where an autopsy would have given us information of the highest interest and value, and every effort should be made to secure autopsies in such cases, though we realize how difficult this is in rural districts.—ED.]

THIRTY YEARS' PROGRESS IN RADIOGRAPHY

Then, a good X-ray picture of the hand required a half-hour. Now, a better one is made in 1/100 of a second.

TYPHOID CARRIERS

A typhoid carrier is a person who harbors the germs of the disease and may therefore convey it to others, although he himself is no longer ill with it.

The discovery of typhoid fever carriers sometimes reads like a Sherlock Holmes story. There was recently discovered, in Chicago, a carrier who illustrates this statement.

In July of this year, a young man, Mr. A., was reported to the Department of Health as a typhoid fever case. A Health Department physician was promptly sent to visit this patient, and found that the latter worked for his uncle, Mr. B., a baker, living several blocks away. In the course of the interview, the patient mentioned that the uncle and his wife were also sick in bed. Their disease had been tentatively diagnosed as influenza. The medical inspector "smelled a rat" and immediately visited the baker uncle and his wife. Their symptoms suggested that they too had typhoid fever, and a blood test bore out the suspicion.

The nephew had been of the opinion that he had contracted the disease from the uncle and aunt, and they in turn attributed their infection to the nephew; but the final results showed that both guesses were wrong.

A study of the dates of onset of the disease showed that a fourth person could have infected all three persons at about the same time; and since all of them ate their meals in the home above the bakery, laboratory examination was made of specimens from all members of the household. The results revealed that the grandmother, 65 years of age, was a typhoid-fever carrier.

Further inquiry developed the information that the grandmother had had typhoid fever in Germany during childhood. Later, she married and, when she was 30 years of age, her husband died from typhoid fever. Still later, her youngest son had typhoid fever at the age of 16, but recovered. Therefore, counting the three recent cases of Mr. and Mrs. B., and their nephew, Mr. A., she had conveyed typhoid fever to at least five of her relatives, and possibly to other persons.

She was cleanly in her habits, or she would probably have infected a much larger number. Had the present-day knowledge of typhoid fever been available when she was a child, these five cases of typhoid fever could have been prevented, the poor woman would not have lost her husband at the age of 30, and gone through life a widow.

All persons who are in intimate contact with a carrier should be protected against typhoid fever by vaccination. This process is quite harmless and affords protection lasting over a period of years. It is the cheapest known form of insurance against typhoid fever.

HERMAN N. BUNDESEN.

Abstracted from *Chicago's Health*.

STOCKS VS. BONDS

From time immemorial it has been assumed that bonds afford a safer and better investment than stocks. In accordance with that idea, the laws have been framed to limit trustees to investments in bonds or securities similar in nature.

In 1912, I was one of several economists who contributed to a book entitled, "How to Invest When Prices Are Rising", in which we contended that this traditional idea is incorrect.

More recently several other writers, notably Mr. Robert W. Pomeroy, especially in his "Stock Investments", and Mr. A. Vere Shaw, of Scudder, Stevens and Clark, have reached the same conclusion.

The latest studies are the very extensive ones of Mr. Edgar L. Smith in his interesting book, "Common Stocks as Long Term Investments", and of Mr. Kenneth Van Strum in a series of magazine articles. These writers have proved, statistically, that bonds are not, as compared with well-selected and diversified stocks, what they have been cracked up to be, that they are especially deceptive during rising prices, and that even when prices are falling they are not usually superior to stocks.

Old ideas die hard. The recent writings of Edgar Smith and Kenneth Van Strum have thrown a bombshell into the investing world. But the attempts to answer their arguments, as far as I have seen any, are comically inadequate. Their arguments are, I believe, unanswerable. They show that during the falling prices following the Civil War stocks and bonds are about equal as to yield, while during the rising prices since 1896 the real yield on stocks is about four times the real yield on bonds.

To understand the stock and bond problem we should go back to first principles.

A bond entitles the owner to interest and return of principal after a period of years. Thus a 5 percent thirty-year bond means that the owner is entitled to \$1,000 in thirty years and, in the meantime, to a fixed and steady income of \$50 a year.

Common stock, on the other hand, entitles the owner to whatever remains after bonds and other fixed obligations have been provided for.

Thus a share of stock in a corporation owned in 10,000 such shares means that the owner is entitled to one-ten-thousandth part of the income and capital of that company after its debts are taken care of.

The bondholder has one advantage over the stockholder, that of having his claim attended to first. If there are not enough earnings to go around, the stockholder must be the one to go without. Not only must the bondholder's interest be paid first, but, in case of liquidation of the assets, should the company become insolvent, the bondholder must be paid in full before anything can go to the stockholder.

Thus the stockholder takes the risk of the success of the business while the bondholder is practically assured his interest and principal.

Why, then, is it not true, as is almost universally believed, that "gilt edged" bonds are safer and better?

The Stockholder Has a Chance of Gain

The first answer is that the stockholder not only assumes the risk of a decrease in earnings but, on the other hand, possesses the chance of an increase. Any bond of the Bell Telephone Company or the Ford Motor Company could not share in the prosperity of the company, however rich it becomes. The result is the stockholders grow all the richer. While few companies have such phenomenal success as the Bell Telephone or the Ford Company, and while the name is legion of those companies which go broke, nevertheless, the facts indicate that, on the average and in the long run, with all the risk, the stockholder comes out better because of his chance of gain.

Thus the bondholder pays dearly for his supposed safety and regularity of income. True, the stockholder buys a lottery, but the facts show that the price he pays is below the mathematical chance. The lottery tickets are unduly cheap, just because of the traditional preference for bonds, which are unduly dear.

Steadiness of Income

But, this is only the beginning of the story. As a matter of actual fact, in all but "wildcat" companies, the shareholder's actual cash income does not fluctuate very widely. This is because modern corporation directors pursue a conservative dividend policy. Just because of a common dread of lowered dividends, the modern policy is to declare only such dividends as are pretty sure to be kept up. In other words, the most approved dividend policy is one of steadiness. This is accomplished by trying to put back in the business a certain amount each year, just as thrifty people put something aside in the savings bank. Year after

year, for every \$5 that the owner of the share of stock gets, another \$5 or so is put back in the business. One corporation head says that it is an axiom that a growing company must try to put back about half of what it earns. The aims are not to disappoint the stockholder, to make his dividend steady, at least as large as it usually had been, if that is possible, and to invest what is left in the business. In fact, sometimes dividends are declared when the earnings, for the time, are insufficient by drawing on the surplus, thus feeding lean years out of the left-over from fat years.

This brings us to the third point, namely, that the constant reinvestment of earnings rolls up just as does one's savings in the savings bank, but, quite often, far faster. Every cent of this accumulation belongs to the stockholder, not the bondholder, and, except through ill-luck or bad management, these accumulations will not be dissipated but will steadily grow until the company feels it safe to increase the dividends. The stockholder who begins with \$5 a share is apt, if he is patient, ultimately to get much more—sometimes many times as much—in the course of a lifetime. The bondholder has nothing to match this. *Thus the supposed unsteadiness of the stockholder's income is one in name rather than in fact—that is, in a well-managed company.*

The Bondholder Loses on Rising Prices

The fourth answer is that when prices are rising, that is, when the dollar is depreciating in value, the bondholder loses in the value of his principal and interest. His purchasing power is lessened. His income may be "steady" in terms of dollars but it is really very unsteady in *purchasing power*. German bondholders were, of course, ruined by the fall of the mark. A 1000-mark 5 percent bond continued to yield fifty marks, but what was the mark? In actual bread and butter, in ability to cope with the cost of living, the mark fell, say, fifty-fold during the war, thus reducing the *real* income of the bondholder to one-fiftieth of what it had been; and, after the war, the bottom fell out altogether.

But, you say, that does not apply to gold bonds in the United States. Most assuredly it does! It applies to bonds expressed in any kind of unstable money. But, you ask, is our gold dollar not stable? Most assuredly not! The dollar today buys only two-thirds as much as before the war, and

in 1919-'20 it bought only half as much. On the other hand, history shows that back in 1896 the dollar bought three times as much as in 1919-'20 and twice as much as today. Is that a stable dollar?

So, when prices are rising—that is, when the dollar is shrinking—the bondholder complains of a “high cost of living”, which is another way of saying that he is losing real income and principal though nominally they remain the same. Moreover, since, during rising prices, the world is getting no poorer (but rather richer) in real goods, what the bondholder loses the stockholder must gain.

Thus we find that the bondholder's “steady income” is a delusion and a snare, so long as we do not stabilize our dollar. Our own war inflation ruined numerous colleges, hospitals, foundations and other institutions as well as widows and orphans through the fall of the dollar, just as the fall of the mark swept away the savings of German bondholders. The difference was merely one of degree. Our bondholders have lost, sometimes, through long periods of rising prices, two-thirds of their real value, while the German bondholders lost over 99 percent. That is the only difference. Dr. W. I. King, now secretary of the American Statistical Association, estimated that in the last few years 40 billion dollars' worth of value changed owners in this subtle way.

The evil is all the worse because it is not realized. People talk in terms of the “high cost of living” instead of in terms of a depreciated dollar, and never realize that it is at bottom a matter of a changing dollar. Among other tricks played on bonds by unstable money is to play havoc with bookkeeping. Income and principal get confused. During rising prices bondholders do not realize that they are eating up much of the real principal when they spend all of the money income.

The net effect of fluctuations in the price level—that is, in the purchasing power of the dollar—is not only to make bondholder's income really fluctuate but often to *decrease* the fluctuations in real income of the stockholder. We all know that during the war extra dividends were often declared just when most needed, because of the high cost of living; and stockholders grew rich while bondholders could not pay their bills.

Diversification of Stock Investments

There is a fifth answer, much emphasized by Edgar Smith and Kenneth Van Strum. This is that, whatever truth there is in the

“risk” carried by the stockholder as compared with the bondholder, this risk can be partly neutralized by diversification. If one invests \$10,000 in ten different companies, putting \$1,000 into each, while he does run a real risk of losing all he has invested in some one or two of these companies, this risk is mostly offset by the probability that some other company will prosper exceedingly. Both Smith and Van Strum show how this diversification does neutralize the risk and corrects the unsteadiness of the stockholder's income.

The bondholder, like the stockholder, may be said to be “gambling”. In fact, he is more like the man betting on heads or tails. The dollar will go up or down for *all bonds at once*, and there is no way to iron out that gamble by diversification. The only way to stabilize income from bonds is to buy stocks as well, these also being diversified. The truth is, there is no way to get the gamble out of life altogether. Neither stocks nor bonds are really “safe” as to purchasing power. On the whole I regard investments in well-selected diversified stocks as less akin to gambling than investments in bonds, chiefly because of the everlasting gamble in our unstable dollar. But, even if the balance from the standpoint of steadiness may be, in general, in favor of bonds, that advantage is certainly very slight as compared with the bigger income that one can, on the average, get in stocks.

There are, then, five reasons for the now proved fact that stocks are a better investment than bonds:

- 1.—The stockholder stands to win as well as to lose.
- 2.—Modern dividend policy is toward steadiness.
- 3.—A portion of the stockholder's earnings is reinvested for him and ultimately yields further dividends.
- 4.—The unstable dollar tricks the bondholder, but any effect on the stockholder is largely neutralized.
- 5.—Diversification can correct the irregularities of the stockholder's income but not that of the bondholder.

In short, the alleged safety and steadiness of bond incomes are dearly paid for.

IRVING FISHER,
Professor of Political Economy,
Yale University.

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The Leisure Hour

Conducted by GEORGE H. CANDLER, M. D.

Children Of The Child, Rejoice!

RING out the chimes and let glad anthems swell:
THE CHILD is born, and to the deeps of Hell
Pierce the clear beams from Bethl'em's star, now lit
To lead men HOME—will they but follow it!

Clear to dull eyes, it shines *above* the Cross
To tell us, living, Death is not a loss;
But sure translation from our house of clay
To realms celestial and Eternal Day.

THE CHILD was born: He lived for us and died;
But rose again and now reigns glorified,
Leaving His Star, bright-shining now, as then—
Emblem of Life—of "PEACE, GOOD WILL TO MEN."

G. H. C.



A Bas les Rudolfos

ON A recent day the editor of the *Chicago Tribune* took a stub pen in hand and wrote an editorial. In it he thanked God for Red Granges and similarly constituted he-men and, in very vigorous English, said "Pooh-pooh for you" to Rudolfo Valentino. Said editor voiced the opinion (which I share) that most men in this far from effete U. S. A. *hated* Rudolfo—chiefly because the "wimmen", the frail, fanciful, fluffy females of every family, loved him so excessively. I don't know anything about the *Tribune* man's domestic affairs, but, if he is "matrimonially mated" and has growing daughters, I hope he doesn't go home for at least three weeks. It would pain me greatly to read his obituary. Perhaps, however, he may know just how to throw 'em off when they tackle and then, with a sardonic "Ha! Ha!", gain five yards like old-thing McCarty.

If he escaped or overawed his female relatives, he did *not* get away from the "wimmen" letter writers; they went for him from both sides and in the middle. They gave him to understand very distinctly that they all loved Rudolfo and yearned to kiss and fondle him because he was *so* beautiful, *so* chivalrous, *so* masculine, *so* romantic, and *so* almost-everything-desirable that other mere men looked beside him like ear-wigs beside an elephant, or something like that. Personally, I'd just as soon look like *any* old insect as an elephant and, if I even suspected I looked like Rudolfo looks to me, I'd jump into the Chicago River and there, very miserably and odoriferously, d-r-r-rown! Perhaps, you feel the same way about it? Again, perhaps you may wish every fair thing who "rolls her own" would regard *you* with first an appraisive and then an acquisitive eye. Some of us are like that—and some of us are always in trouble like Durkin. Anyhow, let us dissect the situation and see if we can discover what it is WOMAN really wants of, in, or from a man.

We have been told that Man inherently is a polygamous thing, but woman, normally, a "one-maner". Can it be possible that her monogamous nature "only asserts itself" when she can capture a complete, unabridged edition of a rotary, semi-automatic but perennial lover like Rudolfo? Are most women really ready to fall on the neck or at the knees, or in any old way "get on the

hands of" any beautiful, bouncing Byronic bozo? If they are, my brothers, we shall ultimately have to become B. B. Bs. somehow or wend, untamed by feminine hands, to our cold, close tombs!

"Wimmen", heretofore, we are now given to understand, have been suppressed and cruelly overridden by the brutal male. NOW, they are emancipated and demand self-expression (observe that *e-man-ci-pated* closely, and if you are not clear about its derivation and exact meaning, see old-man Webster).

The way these 1926 model females express themselves about Rudolfo *et al* leads me to believe that we have all been missing something. Each of us probably has attached himself, or in some way become attached (fastened), to one female. That has been the thing to do for quite some time. We have fatuously thought that to *that* female we always were IT—and a whole lot of us have sneakily hoped that we were also that to the great majority of such of the female sex who cast their swimming orbs our way. We were not knock-kneed, hunch-backed or strabismic and we carried on as we believed he-men should; therefore, why should the other half of our knot (or any other sane woman) pass us up as "seconds", and yearn frantically for someone else? Why, indeed? Of course, sometimes she *did*—perverse thing—and we as a sex (her choice excepted) thereafter regarded her askance. Yet, as a matter of fact (if we will let the emancipated female tell it), we proved usually *wanting*, lacking, minus—almost zero.

When we went around *before* the marital bond was tied tight, *tight*, with a fifty-cent or five-dollar box of "chocolates" or Bonbons in our perspiring mitts, the female of our fancy did not really see *us*—freckles, snub nose, big feet and *tout ensemble*, but a beatific being, all fire, beauty, romance and L-O-V-E! What she had dreamed of, she visualized in us; the one tangible guy who came around regularly and meant business. So, dreaming dizzily, "the twain were wed", and became one. One is less than two at any time and very soon, probably, one at least became something less than nothing!

The bringer of the bacon may be a necessity (a sort of legal encumbrance),

but lovers *a la* Lucia di Lammermoor, or Lorenza Lombardi, or Lucretia Borgia or something (with soft music and low lights) are *luxuries*. Naturally, the feminine heart craves luxury. Who doesn't? Naturally, also, the woman who sees a Sheik enter a silk-hung tent and regard, with burning eyes, a feminine creature sleeping with parted lips upon a couch covered with a leopard skin (the couch I mean) is *thrilled* by the possibilities, especially if the Sheik has no legal right to be there. If, under such provocation, he grabs her and she struggles in his g-r-a-s-p, and he hisses: "Lie still, you little fool", isn't every woman's dream being fulfilled, and doesn't each fluttering feminine heart yearn to be told to "Lie still!" in just such surroundings, too? Does the man *she* has drawn in "Life's Lottery" ever come in and gaze at *her* while perfumed winds steal through the apertures and tom-toms tom in the distance? Does *her* man ever say, as he seizes her with great strong hands, "Lie still, you little fool?" He does not! He just yawns, puts out the light, sets the alarm clock and gets into bed, and snores. THAT is what is the matter. That is why 66 2/4 percent of our women love Rudolfo. They dream today a little more actively than they did (because they have seen and heard and read more things), and the "Stacomb Sheik", moving majestically across the screen or stage, makes their dreams come true. Moreover, there is, in their work, a sort of "to be continued next week" *motif* which is most intriguing. Just WHAT will happen next? Ah-h! What? At home now, with any "mere man" every woman knows what will occur. There is no expectancy, no mystery, no *je ne sais quoi*—and who can "live their own life" without *that*.

Red Granges may give a thrill but they don't always impart it at the right time. Big he-men may spoil everything by coming in and saying "Hullo, old girl", and "nice fellows" can ruin what might have been an ideal evening by sitting upon the overstuffed davenport and regarding the creases in their 24-inch Oxford pants, when they should be grabbing, grasping, declaiming, demanding, et cetera, yet remain, of course, "perfect gentlemen", ready to complacently resume contemplation of their creases upon demand. The modern woman—she says so—demands poesy, passion, physical perfection, wild wooing and ecstatic embraces, *provided* (this being a "difficult age") she can also have a seat at the Ladies Auxili-

ary, a checking account and be on the visiting lists of the "best-people". Also, she demands that someone pay the bills—pay freely—and as there are not quite enough Rudolfos to do that for *every* female most of them have to take just any old male they can get. There goes poor dear *romance*! The male in question soon becomes the "old man" or "father" and any sway-backed, narrow-hipped, stacombed romanticist out of reach will be idealized. It is, of course, "a reproach, a hissing and a shame" to us very ordinary men that our wives should become so infatuated, but if we have fallen short we deserve everything we get. It is no earthly use for us to stick our heads in the sand and pretend we are what we are not. We are *not* Rudolfos—at least most of us are not (in our family nests anyhow) and that is what we will have to be if we are to fully satisfy the feminine fancy. BUT, we must also fire up the furnace, cut the grass, rock the twins and do odd jobs around the house—and I'll defy any mortal man to look really romantic, fiery and poetical while doing any of these things. Most of 'em are grubby and perspiry—the twin-rocking stunt neither of these, but somehow not exactly seductive. A horrible idea strikes me at this point. The twins originated it, I think. Don't we men also have dreams—"before taking", and, sometimes, *after*, also? Don't we have hours and harems and passionate passages and "lie-still-you-little-fool" phantasies. Yea, I wot we do, and again, yea, verily! And what do we finally *get*? There, *fraters*, as William has so succinctly said, "is the rub". We get—well, just what we get and she isn't forever a *hour*i and she objects to "passionate passage" and accuses us of drinking if we try them out on her.

She sleeps with her mouth open and doesn't breathe "through dewy perfumed lips" (if the rouge is off) and generally looks and acts like a common every-day wife does look and act. Then, too, she has (ultimately) a unit, twins or triplets and thereafter thinks a whole lot more of them than she does of you! Then rest assured that when she looks at *her* infant son after a visit to the Movies she sees in him a perfect Rudolfo and in you merely a necessary incident. It is, unhappily, the impossible, the unattainable, that which might be (but isn't) or that which will be (but won't) which fascinates. "Romance" in the lives of both women and men is 10 percent fact and 90 percent fiction and the reason

all women "adore" Rudolfo is because he represents to their fancy every impractical delight they would like to experience—in connection with all the practical things they do possess—and must have to be tolerably happy week after week. Some women (and some men, too) would like a week of delirious abandon every so often. But fifty-two weeks per annum of that sort of thing would be just fifty too many.

We must have Rudolfos, even as we had Byrons, even if they *are* nuisances and disturbers of domestic serenity, but though they come and go more and more frequently we must still have just Father and Mother and the kids, of course. We're all very unsatisfied and unhappy and our longings are sometimes too incandescent to express, but we always have managed to survive and we probably shall continue to do so. Still, if Mama insists upon Rudolfoing too much, buy a pair of sandals and a bottle of attar of roses and, perfumed, steal stealthily into her chamber, draped in one of those bathrobes designed by some Asiatic lunatic. Then, seize her firmly, breathe hot, passionate words into her ear (the nearest one will do even if it isn't like a rose petal) and, if she protests, hiss "lie still you fat* little fool"—and see what happens! If asked to recount your experience, you'll probably lie still. Men do that; even Rudolfos. Finally, let us remember that quite often things discreetly screened are interesting, even entrancing, but unscreened (or unscreambled), they are not quite so good. Sometimes worse than that!

Restiz tranquile.

*Perhaps the "fat" had better be omitted.

"Now that endoscopy is making such astonishing strides, one wonders what the outcome will be when the Esophagoscopist and the Sigmoidoscopist clash their armamentarium together."—*Philip Franklin*, of London, Eng.

STATIC

Friend: "What a horrible noise comes from that radio set!"

Radio Fan: "Well, I guess you would make just as bad a noise if you were coming out of ether."—*Weekly Scotsman*.

A NEW DEPARTURE

The Health Department of New York State has inadvertently discovered a new remedy for ophthalmia neonatorum (babies' sore eyes). The father of a new-born child filled out and filed the birth certificate, since no physician was in attendance. In answer to the question, "What preventive for ophthalmia neonatorum did you use?" he replied, "Baptism."

THE DOCTOR BROUGHT HIM

A southern colored woman calls her little boy "Prescription." "What an odd name," some one said to her. "Why do you call him that?"

"Ah calls him dat, bacauz Ah has such hahd work gettin' him filled."

THE EMBRYO NURSE

She had been too young to go as Red Cross nurse at the time of the war but she harbored the ambition, so that, when one of the household was taken ill she assumed the care of the sick-room. The next day when the doctor arrived she was taking the temperature, and so he asked, "What was the temperature at the onset?" "Oh, I don't know," she replied, "I took it by mouth."

MARVELS OF HEREDITY

Phyllida: "Sometimes you appear really manly, and sometimes you are effeminate. How do you account for it?"

Phillip: "I suppose it's hereditary. Half of my ancestors were men and the other half women!"—*Bystander (London)*.

CARELESS JOHN

Mrs. Balke: "Husbands are strange creatures."

Her Friend: "Aren't they? John has to ask his garage man a hundred questions about the brand and manufacture before he puts a drop of oil into the car, but he never asks his bootlegger a single question for fear of hurting his feelings."—*New York Sun*.

Thumbnail Therapeutics

FEVER IN PNEUMONIA

To reduce high temperature in pneumonia, let the covers over the patient be very light—a single sheet—to allow evaporation of sweat. Use ice bags all over the abdomen, protecting the groins from cold.—BARR, in *Am. Practitioner*.

CARE OF THE SKIN AND MOUTH IN PNEUMONIA

Cold sponging in pneumonia is too harsh. Give warm sponge baths in a warm room. Keep the mouth, teeth and tonsils clean. Disinfect the sputum.—Therapeutics, *J. A. M. A.*, February 9, 1918.

DRUG THERAPEUTICS IN PNEUMONIA

Codeine for distressing, unproductive cough; ammonium chloride to liquify sputum; camphor for cardiac dyspnea with small pulse and cold surface; caffeine for small, weak pulse; morphine or codeine for severe pain.—*J. A. M. A.*

DIET IN PNEUMONIA

The diet in pneumonia should be free but light, containing all the food elements, especially carbohydrates and plenty of water. Do not neglect sodium chloride, calcium and iron.—*J. A. M. A.*

NUMOQUIN (OPTOCHIN) BASE IN PNEUMONIA

Numoquin Base, given in 4-grain doses, in capsules, five times in 24 hours for 15 doses, caused no marked toxic symptoms in any of the 35 patients who received it. Of these cases, 27 were pneumococcus pneumonias. Only 3 died.

It is too early to make positive statements about the therapeutic worth of this drug, but it appears to be safe and interesting.—DRS. BALDWIN & RHOADES, of Bellevue Hosp., N. Y.

IMPROVED METHOD FOR PHLEBOTOMY

The instrument required is an aspirating needle two inches long and 1/16 inch in internal diameter, with six inches of rubber tubing attached to the hub.

Sterilize the needle and tubing and, if it is desired to use the blood for laboratory

purposes, provide a sterile 500 Cc. flask; apply a tourniquet to the arm so that the veins in the bend of the elbow become prominent; disinfect the site of puncture; insert the needle into the vein *against* the blood current (point toward the hand); withdraw the desired amount of blood into the sterile flask or other receptacle; remove the tourniquet and apply a firm compression bandage over the site of puncture.

DR. LOUIS JACOBS, of New York.

POULTICES FOR BABIES

Avoid poultices to the front of the chest in young children, on account of the softness of the ribs. A light jacket of cotton may be used instead when required.

—DR. EUSTACE SMITH.

ACUTE INFECTIONS

In 122 cases of acute infections, including bronchitis, whooping cough, bronchopneumonia, Ludwig's angina, erysipelas, etc., treated with neutral acriflavine, response was satisfactory. Chronic conditions were less tractable.—DR. F. MCKELVEY BELL, in *M. J. & Rec.*

PROPHYLAXIS OF COLDS

The body's natural defenses against "colds" are: a sound sympathetic nervous system and freedom from toxemia or sepsis.

The layer of mucus over the membranes of the nose is nature's protective covering. *Do not remove it.*

Careless handling of the handkerchief is a considerable factor in the spread of "colds."

There is no specific germ.

Educate your patients.

DR. LONG, of Chicago.

ETIOLOGY OF COLDS

The basis of 80 to 90 percent of all head-colds is *hyperplastic ethmoiditis*.

The turbinates appear as swollen, pale, inert bodies. The sinuses are blocked. This furnishes a fertile field for infection.

The basis—and, therefore, the proper treatment—of most "colds" is *general*, and not local.—DR. F. J. NOVAK, of Chicago.

Diagnostic Pointers

BRONCHITIS AND BRONCHO-PNEUMONIA

In bronchitis the leucocyte count will be from 12,000 to 14,000 per cu. mm.; in bronchopneumonia about 20,000.

PNEUMONIA AND SUDDEN DEATH

Pneumonia is sometimes a cause of sudden death in people going about their business as if nothing was the matter with them.—DR. SAMUEL GEE.

PROGNOSIS IN BRONCHO-PNEUMONIA

Bronchopneumonia is always a grave disease. Under good conditions the mortality is from 10 to 30 percent; in hospitals and among the poor, 30 to 50 percent. The prognosis is best in the primary cases and greatest in secondary forms.—BUTLER.

DIFFERENTIAL DIAGNOSIS BETWEEN ACUTE CONDITIONS IN THE THORAX AND ABDOMEN

The following symptoms are not invariable but are highly suggestive:

	Thoracic	Abdominal
Fever	High from start	Goes up slowly
Rigor	Common	Rare
Vomiting	Rare	Common
Pain	Worse on breathing	Constant or spasmodic
Cough	Common	Rare
Movement of <i>alae nasi</i>	Frequent	Very unusual
Skin	Dry and hot	Cold and clammy

DR. ZACHARY COPE, of London, Eng.

LOBAR PNEUMONIA IN CHILDREN

Uncomplicated primary lobar pneumonia in infants and children may be accompanied by a decidedly atypical temperature curve.

Practically all lobar pneumonias begin at the periphery of the lung. The disease may

run its course in 48 hours, but the average is 9 days. Daily temperature variations of 6 degrees may occur, and oscillations of 10 degrees have been observed.—DR. H. I. GOLDBERGER, in *Arch. Pediat.*

PAIN IN THE CHEST

Pains in the chest may be classified, according to their mode of production, as follows:

I.—*Referred pains*; pains in the chest wall, due to disease in the thorax or abdominal viscera.

- 1.—Coronary disease.
- 2.—Aortic disease.
- 3.—Splenic disease.
- 4.—Gastric disease.
- 5.—Duodenal ulcer.

II.—*Meningeal pains*; from nerve-root irritation.

- 1.—Neoplastic.
 - A.—Extramedullary sarcomata.
 - B.—Intramedullary gliosis.
- 2.—Infections.
 - A.—Tuberc dorsalis.
 - B.—Ascending infectious meningomyelitis.
- 3.—Degenerative.
 - A.—Multiple sclerosis.

III.—*Osseous pains*; produced by encroachment upon the vertebrae.

- 1.—Neoplastic.
 - A.—Sarcomata (primary).
 - B.—Carcinomata (secondary).
- 2.—Infections.
 - A.—Spondylitis deformans.
 - B.—Tuberculous spinal caries.

DR. GEORGE SWETLOW, of New York.

POSTPNEUMONIC EMPYEMA

In any case of persistent symptoms after pneumonia, empyema should be suspected rather than unresolved pneumonia.—DR. CARL A. HEDBLUM, of Madison, Wisc.

ATALECTASIS AND PNEUMONIA

The signs of atelectasis may simulate those of pneumonia, but the heart is displaced toward the collapsed side.—DR. FREDERICK T. LORD, of Harvard Med. School.

Current Medical Literature

TREATMENT OF LOBAR PNEUMONIA

Dr. J. E. Miller, of the U. S. Navy Medical Corps, believes that the fact that attendants rarely contract pneumonia from their patients indicates that man is relatively immune to this disease. He further states that infections of types 1 and 2 give rise to prolonged immunity, while those of types 3 and 4 do not do so.

In the *U. S. Naval Med. Bul.*, for August, 1925, Dr. Miller discusses this disease in a straightforward and practical manner. He believes that the most important predisposing factor is the upper respiratory infections—coryza, etc.—which have been shown to precede the development of pneumonia in about 40 percent of cases, and he feels that all cases of such infections should be isolated and put to bed for a few days. Hunger, profound fatigue, lack of rest and sleep, undue exposure, surgical shock, chronic alcoholism and all wasting diseases are also important predisposing conditions. These should be carefully avoided.

The symptomatology of the disease should be considered side by side with the treatment, as all our efforts should be based on an attempt to restore normal physiological conditions, so far as we are able to do so.

The chief symptoms of pneumonia are due to toxemia, and should be treated on the same principles as any other toxic state. The initial chill is due to the absorption of pneumotoxin—a foreign protein—and is the first step in a typical protein reaction or shock, the succeeding fever and leucocytosis being parts of the same characteristic picture. The fever and leucocytosis vary directly with the severity of the toxemia and are nature's reaction to the infection. Any attempt to reduce temperature by drugs or hydrotherapeutic measures should be considered as malpractice.

If the patient is to be taken to a hospital, it should be done *early* in the disease, as movement after twenty-four hours will lessen his chance for recovery and may be the cause of his death. A competent nurse is, however, a necessity, and the prone position in bed will usually be found most satisfactory, with as little movement as possible and that done by the attendants and not by the patient's own efforts.

Water should be given *freely*—by rectum, hypodermically or intravenously, if necessary—to dilute the toxins; but food is of secondary importance and should not be forced, but given only as the patient desires it. Fruit juices, buttermilk, egg-nogs, broths and ice cream are suitable during the febrile period.

The bowels should be moved daily by *enemas*, and sleep and rest must be secured, even if it is necessary to do so by means

of morphine (without atropine), which Miller believes is one of the most valuable drugs in the treatment of pneumonia, and one which should never be withheld when it is definitely indicated.

Cardiac stimulants, such as caffeine, strychnine, alcohol and camphor should be avoided, in most cases, and visitors should be excluded or strictly limited.

Early pain in the chest is usually due to pleurisy and disappears soon if uncomplicated. If it persists and is accompanied by tenderness on intercostal pressure, it is an early and valuable sign of beginning *empyema*. Simple pleuritis can be relieved by unilateral strapping; and if the fluid contains pus cells, but is *sterile*, repeated aspirations will generally be successful. If, however, the fluid contains pneumococci, *prompt surgical drainage* is indicated.

The value of digitalis in the treatment of pneumonia is open to question, as death, in these cases, has been shown to be due to *respiratory* rather than cardiac failure. This view is confirmed by Sir James Mackenzie. The chief (perhaps the only) indication for this drug is the presence of auricular fibrillation or flutter, and here it should be used in physiological doses.

Sixty-two patients have been treated on these principles, without the use of serum, and with a mortality of 6.3 percent, all the deaths having occurred in patients who were chronic invalids, where the pneumonia was a terminal infection. This compares well with the usual mortality of 25 to 30 percent.

OXYGEN IN PNEUMONIA

The fact that oxygen as a means of combatting the anoxemia and cyanosis of pneumonia has produced very meager results and has fallen largely into disrepute is believed by Dr. C. A. L. Binger, of the Rockefeller Institute, to be due to the fact that our methods for administering it have, until recently, been inadequate and based upon faulty premises in many cases. He feels that we might as well try to produce the effects of digitalis by spraying it around the patient's room with an atomizer as to give oxygen by the tube and funnel method.

In an interesting article in the *N. Y. State J. of M.*, Dr. Binger goes into the biochemistry of anoxemia. Under normal conditions, the arterial blood is about 1 percent unsaturated with oxygen and the venous blood is about 7 percent unsaturated. The capillary unsaturation represents a mean of these two, or 4 percent.

The doctor, while investigating the effects of altitude on the human organism, went from sea-level to an altitude of 15,000 feet in a period of six hours, and thus describes

his sensations: "I felt like an octogenarian who had spent a winter night on a hard park bench and had been suddenly aroused by a hit on the head with a policeman's night stick. There was intense occipital and frontal headache, palpitation, precordial pain, rapid breathing, nausea and a great sense of depression. All these symptoms were brought about by a reduction of the percentage of saturation of my arterial blood from 95 to 84."

This shows what untoward symptoms may result solely from a reduction of the oxygen in the blood in a healthy person. Most pneumonia patients show an oxygen reduction as great or greater than this and, in the presence of the toxemia from which they also suffer, the results are even more disastrous. It will thus be seen that, if we can raise the oxygen tension in the alveolar air by 40 or 50 Mm., we will be able to give the patient great assistance in his fight against the disease.

A few hospitals now have small rooms or chambers in which a patient's bed can be placed and the oxygen tension in the room then raised to and maintained at any desired level. A larger number of institutions are provided with oxygen tents which can be adjusted over any bed and which work very satisfactorily.* Several rebreathing masks have been devised for use in private practice in the patient's home, but these are not so effective and are impractical if the patient is delirious or very restless.

POSTOPERATIVE PULMONARY COMPLICATIONS

Postoperative pneumonia is a condition always to be dreaded, but from a careful study of a large number of such cases, Dr. P. G. Bowman, of Duluth, Minn., is convinced that by no means all postoperative pulmonary complications are truly pneumonia. He discusses his findings in *Minnesota Medicine*, for August, 1925.

Bowman is convinced that many more cases of this sort occur than are ever diagnosed or even suspected, and that the morbidity from this cause will run to 2 or 3 percent of all operative cases, with a death rate approximating 0.6 to 0.7 percent.

The various pulmonary complications may be classified as follows:

- 1.—Pulmonary infarction—small emboli.
- 2.—Lobar and bronchopneumonia.
- 3.—Bronchitis.
- 4.—Pleurisy.
- 5.—Pulmonary embolism—large emboli.
- 6.—Empyema.
- 7.—Lung abscess.
- 8.—Exacerbation of a tuberculous lesion.
- 9.—Massive collapse of a lung, due to:
 - (a) Bronchial obstruction.
 - (b) Paralysis or spasm of the bronchi from reflex irritation.
 - (c) Arrest of respiratory muscles, from nerve influence or posture.

It has been the custom, in time past, to attribute these complications to the anesthetic,

but these investigations show that they occur about as frequently with local as with general anesthesia, and that the causes are probably:

- 1.—Operating in the presence of respiratory infection, active or latent.
- 2.—Chilling of the patient before, during or after operation.
- 3.—Extensive or severe trauma during operation.

The best treatment is prophylaxis, by avoiding the things just mentioned; by accurate hemostasis and control of sepsis; and by assisting the circulation by a high fluid intake and by other indicated measures.

NEW ANTIPNEUMOCOCCUS SERUM

In *Minnesota Medicine*, for July, 1925, Larson and Fahr report the results of the use, in eight pneumonia patients, of a serum obtained from rabbits, immunized against pneumococci which had been treated with sodium ricinoleate.

The serum was first given in small dosage, hypodermically, to desensitize the patient, and then intravenously, in doses of 50 to 100 Cc. Soon after these injections, the patients had reactions—sometimes with a chill; generally with sweating—and the temperature fell to normal in about three hours. Later, the fever returned and, in some cases, a second dose was given with good results.

This is merely a preliminary report, and the preparation of the serum is not given now, nor are the case reports sufficiently numerous to warrant drawing any conclusions, but this work seems to warrant further investigation.

DEATH-RATE IN PNEUMONIA

Bronchopneumonia is far more fatal to infants than to any other age group, 974 of the 2,333 deaths reported from this cause last year occurring among babies less than one year old. Lobar pneumonia takes its toll from persons throughout the entire life span, showing a slight preference to those above 30. Last year the mortality from pneumonia fell off sharply compared with that of 1923 but that is quite common, being of little or no significance so far as the control of the disease is concerned.

Illinois Health News.

ATROPINE AND LOBELINE FOR THE PREVENTION OF POSTOPERATIVE BRONCHITIS AND PNEUMONIA

Dr. E. M. Frommer, of St. Joseph, Mo., makes interesting comments in the *Med. Rev. of Rev.* for October, 1925, on 1,500 patients who underwent abdominal operations.

He finds that postoperative vomiting and, especially, postoperative bronchitis and bronchopneumonia are greatly lessened by the preoperative hypodermic administration of 1-60 grain of atropine, and the immediate

*See CLIN. MED. for September, 1925, p. 615.

postoperative administration of 1-6 grain of lobeline, the powerful respiratory stimulant, also hypodermically. Under this treatment only 1.7 percent of all cases developed noticeable infiltration of the lungs.

If bronchitis did develop, it was treated by intramuscular injections of 0.5 Cc. of ether mixed with olive oil, and with 1-6 grain of novocaine (procaine) added to subdue the pain. This treatment was repeated once daily for 3 or 4 days.

When bronchopneumonia appeared, intramuscular injections of 20 grains of camphor, in oil, repeated twice daily, produced excellent results.

POSTOPERATIVE PNEUMONIA

In *Am. Med.* for September, 1925, Dr. Aime Paul Heineck observes that postoperative pneumonia, following subtotal thyroidectomies, may be endemic or epidemic in character; may be due to the anesthetic, to the aspiration of mucus, blood or stomach contents, to exposure to cold before or during or after the operation, to infective emboli or to other causes; but is almost always associated, primarily, with injury to the recurrent laryngeal nerve or nerves.

By avoiding prolonged anesthesia, unnecessary exposure, denudation and rotation of the trachea and, especially, injury to the recurrent laryngeal nerves, postoperative pneumonia can be practically eliminated in these cases.

OXYGEN IN PNEUMONIA

In speaking of the use of chlorine gas in the treatment of acute respiratory diseases, Dr. W. H. Morse, of Hartford, Conn., remarks, in *Am. Med.*, for September, 1925, that the only gas the human body demands is oxygen.

The doctor cordially recommends the use of this gas in the treatment of pneumonia, as a synergist to any and all other forms of treatment, and believes that the pneumonia tent, devised by Barach and Binger, or a modification of it, is the most satisfactory method of administration. This tent is rather complicated and expensive.

Morse recognizes that oxygen does not cure pneumonia, but he believes that it frequently keeps patients alive and adds materially to their powers of resistance.

A SEVERE CASE OF PNEUMONIA

When we encounter a severe case of pneumonia, we are glad of all the help we can get. Dr. Otho C. Godsmark, of Chattanooga, Tenn., offers some in the *Med. World* for May, 1925.

In a patient of his, whose case was diagnosed by another physician, as "influenza" until he had his crisis and began to produce typical pneumonic sputum, the doctor found the entire left lung consolidated, with threatening symptoms in the right lung and a severe pleurisy.

The treatment consisted in enveloping the chest in a hot kaolin poultice, supplemented by hot applications. This relieved the pain of the pleurisy. Stock bacterins were carefully administered. Heart stimulants were reserved for the time of struggle, but were not needed.

The pneumonic process did not develop in the right lung and the patient made a satisfactory recovery.

Dr. Godsmark believes firmly in the efficacy of the bacterins, *when properly used*, but warns against the dangers of careless use and overdosage.

VACCINATION AGAINST PNEUMONIA

In the *M. J. & Rec.* for November 4, 1925, Dr. Wm. H. Park, of New York City, states that, among 1500 volunteers in the Metropolitan Life Insurance Company, prophylactic vaccination against pneumonia of types I, II and III resulted in a considerable degree of protection for a period of six months. We can not immunize directly against type IV, because it is really type four to forty or more—it contains all the other organisms that ever cause pneumonia.

After considerable clinical observation and study, during a period of several years, Dr. Park is of the opinion that pneumonia vaccine is a perfectly rational and sensible thing to give, though it has hardly reached the stage when its general use should be urged as a public health measure.

MERCUROCHROME IN PNEUMONIA OF CHILDREN

Drs. L. D. Hoppe and W. T. Freeman, of Atlanta, Ga., have made an interesting experiment in the intravenous use of mercurochrome in cases of pneumonia occurring in infants, reporting their results in the *South. M. J.* for November, 1925.

The series includes 46 cases—23 lobar and 23 broncho in type—all treated in the same institution at the same time of year.

Twenty-three of these cases were given the usual symptomatic treatment with an average duration of the illness of 16.5 days and a mortality of 39 percent. The other 23 cases received from one to three intravenous or intraperitoneal injections of mercurochrome—5 milligrammes per kilo of body weight—in addition to the other treatment used. The average duration of these cases was 6.5 days and the mortality was 8.5 percent.

PNEUMONIA AND THE PATIENT

In the *Med. World* for May, 1925, Dr. C. L. Schang, of Greenville, Pa., calls attention to the fact that a man who has pneumonia is the same fellow he was before he contracted the disease and that the proper procedure is not to treat the disease, but to treat the man. The proper time to begin the treatment of pneumonia is several years before the infection develops, by keeping the

man in sound, physical condition and teaching him how to live wisely.

Pneumonia is a blood infection and the signs in the lungs are really its later stages. If you can begin your treatment before consolidation develops, your chances of success are much greater. If the patient has autointoxication, diabetes, nephritis, a cardiac lesion or any other chronic disease, your skillful treatment of such a condition will often prevent pneumonia or, at worst, will lay the foundation for your treatment.

Dr. Schang reports two interesting cases and stresses the importance of free elimination, as a preliminary; rest and quiet as a routine practice; atropine if the chest seems full of fluid; codeine for the distressing cough; syrup of ammonium hypophosphite if the secretions are tenacious and sticky. Fruit juices and alkaline solutions (sodium bicarbonate) are useful in all cases.

PNEUMONIA IN CHILDHOOD

In *Klin. Wchnschr.* for April 9, 1925, St. Engel discusses the general subject of pneumonia in childhood.

He attempts a division of lobular pneumonias into two groups; those which follow acute infectious diseases, namely, measles or pertussis, and those which are primary.

In the primary forms there is a diffuse early capillary bronchitis, the manifest localizations being a rather late development.

In the postinfectious bronchopneumonias, the lower lobes posteriorly and usually the left lung are involved.

In croupous pneumonia, he presents an analysis of cases which exhibit the following tendencies:

The younger the child, the more apt is the right upper lobe to be involved. Next in frequency is the left lower lobe, and third, the right lower lobe. Isolated middle-lobe pneumonias are rare. The left upper lobe is practically never involved.

St. Engel pleads for a more intensive study of respiratory infections, in order that the high winter curve of mortality may be reduced.

PNEUMOCOCCUS ANTIBODY SOLUTION

A preparation of the water-soluble protective substances from antipneumococcus serum has been prepared for intravenous administration and, in *Hygienic Lab. Bul.* No. 141 (U. S. Govt. Reports), Dr. R. L. Cecil and his associates report upon its use in treating experimental pneumonia in monkeys.

This solution, if administered early, is found to exert a prompt, specific curative action upon pneumonias caused by the Type I pneumococcus, promptly freeing the blood of pneumococci. In pneumonias of Type II there is a distinct but less marked effect. No beneficial results are noted in cases of Type III and IV pneumonia.

When the solution is injected into healthy rabbits and men, protective substances appear in the blood immediately and persist for two weeks or more. It should therefore be valuable for prophylaxis.

CONSTIPATION IN INFANCY

Dr. J. Claxton Gittings states (*Therap. Gaz.*, Oct. 1925) that, in overcoming constipation in bottle-fed babies, we should increase the fat (carefully) and sugar, or change the character of the sugar (use Karo, dextrin-maltose or can sugar). For babies over three months old, a cereal gruel may be used as a diluent instead of water. The addition of lactic acid (one teaspoonful to a pint of milk) or lemon juice (21 Cc. to the quart) may be very helpful.

Small enemas (1 to 2 ounces) of physiological saline solution are the best local stimulant to defecation.

As soon as the baby can hold its head up (usually after the fourth month), it should be placed on a nursery chair at the same hour every day and taught habits of regularity.

Constipation may be due to atony of the musculature of the bowel and abdomen and a condition of anemia and general weakness or to mechanical defects and deformities.

In the former case, fresh air, sunlight (or ultraviolet irradiations), exercise and correction of dietary defects, with, perhaps, small doses of strychnine (1/500 to 1/400 grain, t.i.d.) and hypodermics of iron citrate and sodium cacodylate ($\frac{1}{4}$ to $\frac{1}{2}$ grain of each, once daily).

If constipation is persistent after ordinary methods have been tried, we may have a condition of pyloric stenosis, dilatation and redundancy of the colon or other factors. Give $\frac{1}{2}$ to 1 grain of vegetable carmine and then move the bowels by a water enema every 12 hours. The dye should appear in the stools after 12 to 35 hours. Delay beyond 36 hours calls for x-ray studies.

While waiting for dietary changes to take effect, we may alternate between saline enemas, gluten suppositories, mineral oil (with or without agar) and milk of magnesia. If constipation is severe small babies may be given a teaspoonful of castor oil, or older ones (6 to 8 months) a dose of 10 to 30 drops of aromatic cascara.

A PLEA FOR THE TONSILS

In a paper appearing in the *Virginia Med. Month.* for Sept., 1923, Dr. J. E. Copeland pleads for the retention of the tonsils and their treatment so as to eliminate infection. (See *CLIN. MED.* for Nov., 1925, p. 768.)

Copeland thinks that there is some distinct relation between the tonsils and the genital organs, and that they have very definite functions, at least up to the time of physical maturity.

New Books

STEWART: PHYSIOTHERAPY

PHYSIOTHERAPY. Theory and Clinical Application. By Harry Eaton Stewart, M.D. New York: Paul B. Hoeber, Inc. 1925. Price \$7.50.

The author of this textbook is not one of those who is carried away by injudicious enthusiasm, as may be seen by his article on page 842 of this issue. He realizes that physiotherapy is not an end in itself, but feels assured, after mature consideration, that it is a very valuable adjunct to other methods of treatment. He does not believe that physiotherapy is a cure-all and, in dealing with clinical applications, has included only those pathological conditions in which the value of these measures seems to be conclusively demonstrated.

What dosage is to *materia medica*, technic is to physiotherapy; so, in this volume, detailed technic is presented, aiming always at maintaining the utmost simplicity.

The first part of the book is devoted to Theory, and Galvanism; ionization and electrolysis; sinusoidal, interrupted and wave galvanic currents; faradism; static; high-frequency currents; phototherapy; actinotherapy, thermotherapy; massage; exercise; and hydrotherapy are ably discussed.

In the second part, Stewart considers Clinical Application, dividing the subject into diseases and injuries of the neuromuscular systems; diseases and injuries of the bones and joints; diseases of the cardiovascular system; gastrointestinal tract; respiratory system; genitourinary system; diseases and injuries of the skin; miscellaneous conditions (such as goiter, otitis media, etc.); postural defects; and foot disabilities.

Here is a book that the beginner or the man who has had experience in the use of physiotherapy can follow with confidence, and any physician can wisely and profitably add to his library.

FISHBEIN: "MEDICAL FOLLIES"

THE MEDICAL FOLLIES. An analysis of the Foibles of Some Healing Cults, Including Osteopathy, Homeopathy, Chiropractic, and the Electronic Reactions of Abrams, with Essays on the Antivivisectionists, Health Legislation, Physical Culture, Birth Control and Rejuvenation. By Morris Fishbein, M. D., New York: Boni & Liveright. 1925. Price \$2.00.

The most effective way to combat the activities of the osteopaths, chiropractors and the disciples of the other irregular systems of the healing art is by educating the people as to their methods and the results of their activities.

The most effective weapons to use against pernicious ideas are an open and straight-

forward presentation of the idea, so that its fundamental unsoundness becomes apparent, and ridicule.

There are few who are better equipped with these weapons or more expert in their use than is Dr. Fishbein, and, in this volume, he has given us a large supply of information and suggestions which we can use in instructing the general public as to the inwardness of the various therapeutic freebooters.

There are chapters on Osteopathy, Chiropractic, the Electronic Reactions of Abrams, "Physical Culture" and Bernarr MacFadden, Rejuvenation, and a number of other interesting subjects, all handled in a trenchant and interesting manner and embodying many quotations from the speeches and writings of leading exponents of the various cults whereby they are condemned out of their own mouths.

If we are to argue convincingly against these gentry we must, ourselves, know what we are talking about, so a reading of this book will prove instructive and valuable as well as highly entertaining.

After you have read it, leave it on the table in your waiting-room so that your patients may have the joy of dipping into it and, at the same time, be absorbing sound and much-needed instruction.

COPE: ACUTE ABDOMINAL DISEASE

CLINICAL RESEARCHES IN ACUTE ABDOMINAL DISEASE. By Zachary Cope, B.A., M.D., M.S. London: Humphrey Milford (Oxford University Press). 1925. Price \$4.00.

It is very gratifying to note the increase in the number of articles and books which are demonstrating that the term "research work" does not always mean work done in a laboratory, but that much may be added to medical science by exact clinical studies at the bedside. This little volume is an excellent illustration of the kind of work we mean.

The author feels and states that it is within the scope of the clinician to test the thoroughness of results achieved by work in the laboratory; to try various empirical methods, and to furnish the results to the laboratory for explanation and elaboration; and to record and compare clinical facts with the object of determining some questions which are inaccessible to laboratory methods of study.

He then presents a fascinating study of the function of the parietal peritoneum in localizing abdominal pain; of muscular rigidity; cutaneous hyperesthesia in acute abdominal disease; phrenic shoulder pain; the differential diagnosis between acute conditions in the thorax and abdomen; genitourinary symptoms of acute appendicitis;

the femoral test for hypogastric peritonitis; and subacute perinephritic abscess.

The book is highly valuable for the original and practical diagnostic points which it gives us, and almost equally valuable as a fine example of the methods and results of careful and scientific clinical research work.

GRAHAM: EMPYEMA

SOME FUNDAMENTAL CONSIDERATIONS IN THE TREATMENT OF EMPYEMA THORACIS. By Everts A. Graham, A.B., M.D. Illustrated. St. Louis: The C. V. Mosby Co. 1925. Price \$2.50.

This little volume contains the essay which won the Samuel D. Gross prize of the Philadelphia Academy of Surgery, in 1920, and aims to present the principles which underlie the management of thoracic empyema rather than to go into the details of its treatment.

The various factors in the pathology of this serious disease are fully considered, from the standpoint of experiments on dogs and from clinical studies which were made possible by the large amount of clinical material which developed during the war.

The methods for the prevention and cure of chronic empyema are discussed and the disadvantages of collapsing operations are stated.

This is an interesting study for those who are dealing with many of these cases, but of little practical value to the general practitioner.

COOPER: PERFECT HEALTH

WAYS TO PERFECT HEALTH. By Irving S. Cooper. Author of *Methods of Psychic Development*. Revised American Edition. Chicago: The Theosophical Press. (826 Oakdale Ave.) 1923. Price \$1.00.

The influence which the mind has over the body is now fairly generally understood; and it is also well recognized that physical states influence the mind. That the moral or spiritual condition of a person may have a profound effect upon his health has received little attention, except from psychotherapists, who are coming to understand these matters.

Most books which consider the subject of health from the standpoint of the inner life are prone to deal in wild or freakish statements. This one is commendably sound and sane, even though you may not agree with the author in his statements regarding occult matters.

The greater part of the book is taken up with a plea for a vegetarian diet, and with suggestions as to how this may be satisfactorily carried out.

Concerning rules of life, Cooper divides these into three classes:

1.—Those which are so fundamental that it is suicidal to disregard them.

2.—Those which are of such value that it is well not to break them.

3.—Those which are "counsels of perfection."

There would be fewer faddists in the world if these rules were practiced in the order of their importance.

Simple suggestions for exercise, rest, fresh air and other matters of personal hygiene are given, and through the whole book there are sentences, here and there, calling attention to the ways in which the physical, mental and spiritual natures react upon each other.

A reasonable, temperate and practical little manual for those who are interested in health from the standpoint of the inner life.

FEINBLATT & EGGERTH: CLINICAL LABORATORY MEDICINE

CLINICAL LABORATORY MEDICINE. A Text-book of Clinical Laboratory Diagnostic and Therapeutic Procedures. By Henry M. Feinblatt, M.D. and Arnold H. Eggerth, A.B., A.M. Illustrated. New York: William Wood & Co. 1925. Price \$5.00.

Realizing the dangers which inhere in the too common practice of letting the laboratory decide the diagnosis rather than contribute to it, the authors have set themselves the task of producing a work in which the findings of the laboratory are interpreted in terms of the patient.

This is not a book for advanced laboratory workers but rather a manual for medical students and busy practitioners, which will teach them what they may expect from the laboratory, in the way of assistance in solving their clinical problems, and how to interpret the reports they receive from the laboratory, as relates to the patient they are treating.

Old laboratory methods are stated briefly; newer methods are given in sufficient detail so that one without special laboratory training can carry them out; the newest procedures and methods are included.

Consideration is given to the technic of those therapeutic measures where the help of the laboratory is needed, such as blood transfusion, the Schick and Dick tests, immunization against diphtheria and scarlatina, etc.

This should prove a valuable manual to the class of readers for whom it is intended—and the class is a large one.

MACKENZIE: DISEASES OF THE HEART

DISEASES OF THE HEART. By Sir James Mackenzie, F.R.S., M.D., F.R.C.P. Fourth Edition. London: Humphrey Milford (Oxford University Press). 1925. Price \$9.00.

In the preface to this (the fourth) edition of his splendid textbook the late Sir James Mackenzie warns us that we should stop frequently and consider carefully whether we are actually making progress toward the goal we have set for ourselves. Such a period of consideration determined him not

merely to revise but to entirely rewrite this edition.

Dr. Mackenzie was one of the most thoughtful and original workers in the field of medical research, and the facts that his researches were chiefly in the domain of clinical medicine, and that he had an unusual ability to set forth his ideas clearly, make his books invaluable expositions of the objects and purposes of clinical research.

He firmly believed that most of us know little about the inwardness of the workings of the circulatory system and have little appreciation of the importance of the variations in heart rhythm and other phenomena which we can class as "functional cardiopathies."

Feeling that the only way for the physician to gain an appreciation of the meaning of the symptoms and ordinary physical signs in heart disease is for him to study these signs and symptoms for a while in connection with graphic heart tracings of one sort or another, he has here given us a large series of such tracings, together with the physical signs which accompany them, so that we may study the two together.

In connection with treatment, one can always sense the effort which the author is making to get at the meaning of the symptoms—the ultimate physiological and biological facts which underlie them—in order that we make direct efforts to correct the altered conditions which have given rise to changes in function or structure or both.

No cardiologist can afford to be without this great work by a great man; and every physician who can and will take the time to study it carefully, or who will place it in his library and refer to it frequently, as need may arise, will find himself constantly growing in understanding of the vast and highly important subject of heart disease and in ability to help such of his patients (and their name is legion!) as may be afflicted with these maladies.

ALLEN: KIDNEY DISEASES

TREATMENT OF KIDNEY DISEASES AND HIGH BLOOD PRESSURE. By Frederick M. Allen, M.D. Part I. *Practical Manual for Physicians and Patients*. Morristown, N. J.: The Physiatric Institute. 1925. Price

This little volume is intended for the use of patients as well as physicians. It seems a bit technical for patients and somewhat elementary for physicians, but it may prove to fill a useful place.

The author believes that disease of the kidneys is almost wholly attributable to errors in diet and that such conditions can be prevented and relieved or cured by correcting the dietary and other habits of the patient. He states that if a patient can eat protein without causing an increase in the nonprotein nitrogen in his blood, protein need not be restricted; and if he can eat salt without giving rise to edema, salt need not be restricted.

A section of the book is devoted to a full description of the laboratory tests on the urine and blood which are required in

these conditions, and a number of pages are devoted to the consideration of nephritic diets, with menus and tables of food values.

Emphasis is laid upon the necessity of having the treatment of cases of kidney disease carefully supervised by a competent physician.

This book should be worth what it costs to almost any physician, even though he may not agree with all of the author's statements.

HOWE: CHEMISTRY IN INDUSTRY

CHEMISTRY IN INDUSTRY. A Cooperative Work Intended to Give Examples of the Contributions made to Industry by Chemistry. Edited by H. E. Howe. New York: The Chemical Foundation, Inc. 1925. Price \$1.00.

Rivalling the "best sellers" of fiction, the first volume of "Chemistry in Industry", which appeared less than two years ago, is now in the thirtieth thousand—a remarkable indication of its readability as well as of the interest that the public is now taking in the application of chemistry to the things which make modern life possible.

Now comes the second volume of "Chemistry and Industry", which is fully equal to the first. It starts with a chapter on Catalysis, and this is followed by twenty-one others, each written by an authority in his field and presented in a manner that can not fail to arouse the interest of the reader.

No one can afford not to read the book; it is informative, clear, and interesting, supplying information about the manufacturing of many products in every-day use, but concerning whose history and production most of us know little or nothing.

Not the least of the merits of the book is the low price of one dollar, made possible because it is published by the Chemical Foundation and sold at cost. It is well printed on good paper, attractively bound in cloth, and would ordinarily sell for several times as much.

The book represents another of the many valuable contributions of the Chemical Foundation to American Chemistry.

E. H. V.

HAMILTON: OBJECTIVE PSYCHOPATHOLOGY

AN INTRODUCTION TO OBJECTIVE PSYCHOPATHOLOGY. By G. V. Hamilton, M.D. With foreword by Robert M. Yerkes, Ph.D., LL.D. St. Louis: The C. V. Mosby Company. 1925. Price \$5.00.

There is no such thing as an effect without an antecedent cause, but we are rather prone to overlook this fact when we are dealing with patients or other persons who exhibit peculiarities of behavior, and to feel that many of their acts are due to moral weakness or just "cussedness".

Little has been done in the line of careful, critical, objective study of the causes which underlie behavioristic aberrations and for

that reason this volume is particularly welcome and particularly valuable, because the author has minutely studied a number of cases with this end in view and has given us his results in a clear and straightforward manner.

The greater part of the book is occupied with carefully-prepared case reports of 200 nervous cases, showing what physical abnormalities, if any, were present and giving an account of the psychic factors which existed and how they were handled.

The second part deals with the Principles of Objective Psychopathology, and is a study of the normal behavior, under natural and artificial conditions, as exhibited by animals and man.

This is an adequate presentation of a much neglected field of therapeutics and its careful study by physicians in general would result in a more adequate and satisfactory handling of "nervous" patients.

"OUR BABIES"

The Department of Health, of Chicago, has issued one of the most attractive and valuable booklets on the care and management of infants which we have seen.

This booklet has required six months and an expenditure of \$50,000 for its production and it is expected that the demand for it will run to a million copies.

Most of the contributors are men of wide reputation, and before issuing the book it was submitted to nearly 100 prominent pediatricians in all parts of the country for criticism and suggestions.

There are 72 pages of printed matter and over 250 illustrations, many of them in colors.

This interesting and valuable booklet may be procured from the Chicago Department of Health, Chicago, Ill., by sending them ten cents—the actual cost of production—and we suggest that any physician who does obstetrical work at all would be wise to procure a supply of them and give one to each mother and prospective mother now on his confinement list. This would be a valuable service to the cause of health education, and also a little personal attention which would be appreciated by his patients.

ATKINSON: TUBERCULOSIS

LESSONS ON TUBERCULOSIS AND CONSUMPTION FOR THE HOUSEHOLD. By Charles E. Atkinson, M. D. Illustrated. New York: Funk & Wagnalls Co. 1922. Price \$2.50.

If a patient is to recover from tuberculosis, his physician must have his wholehearted and intelligent cooperation, and the only way to gain this is to educate the patient.

If the ravages of this disease are to continue to grow less, people must be taught how to prevent it or, failing that, how to detect its presence in its earliest stages

when treatment brings most satisfactory results.

In this volume, Dr. Atkinson, who knows tuberculosis very thoroughly, has set forth, in simple language which any intelligent layman can understand, the true facts—without concealment or exaggeration—regarding the cause, spread, recognition, care and treatment (so far as the patient needs to know it) of tuberculosis.

The precautions necessary to prevent infecting others and to keep other people from infecting you are given in detail, and all the measures for fortifying the body against infection are fully considered.

Emphasis is laid upon the point that early cases of tuberculosis bear little or no superficial resemblance to the classical cases of "consumption," with which the layman is familiar, and that when such signs have appeared the hope of a cure is remote. Whenever any symptoms appear which are attributable to tuberculosis prompt treatment is imperative.

The proper relations between patient and physician are discussed and suggestions given as to how the patient can cooperate with his doctor.

There are chapters on Rest and Exercise, Fresh Air, Diet, Climate, Nursing, Sunlight and various other topics, all so arranged as to appeal to the man who has it all to learn.

The book is arranged as a series of lessons, which conduct the reader, by regular, logical stages from the fundamental principles of prophylaxis to the point where the disease is arrested and his future lies in his own hands.

There are a number of illustrations, all arranged with the idea of teaching important lessons, and the index is ample.

Almost any physician will profit by reading this volume, and it will be of immeasurable assistance to him if placed in the hands of tuberculous patients.

FLICK: TUBERCULOSIS

DEVELOPMENT OF OUR KNOWLEDGE OF TUBERCULOSIS. By Lawrence F. Flick, M.D., LL.D. Lancaster, Pa.: Press of Wickersham Printing Co. 1925. Price \$7.50.

This volume is just what its title signifies—a complete and exhaustive treatise, filling 751 pages of text and 32 pages of index (this is all solid reading-matter—no illustrations), covering the story of tuberculosis from the dawn of recorded history to the year 1925.

Its author's prominence and his long and distinguished connection with the study and treatment of this disease guarantee its authoritativeness, and the book is a monument to his professional attainments and untiring industry.

This volume should be read by every phthisiologist and by those who have the time and disposition to enjoy historical treatises of this sort. It will be of little practical value to the practitioner.

Medical News

PHARMACY WEEK

Pharmacy week was observed, all over the country, October 11 to 17, 1925, with the cooperation of most of the 50,000 drug stores in the United States.

The object of this week was to educate the people and the pharmacists themselves as to the important place which they fill in the life of a community.

Emphasis was placed upon the fact that pharmacy is a *profession* and not a trade, and that the responsibilities of the pharmacist require a high moral standard and adequate training.

The drug store is the natural place to take the victims of accidents for immediate first aid, and this and the fact of the pharmacist's relation to the public make him an important factor in the health education of the nation.

CHICAGO PHYSICIAN HONORED

Dr. P. J. H. Farrell, of Chicago, was elected Surgeon-General of the Military Order of the World War, at the annual meeting held in New York, September 26, 1925.

ENSWORTH MEDICAL COLLEGE ALUMNI

At a meeting of graduates of Ensworth Medical College, held at Kansas City, Mo., October 7, 1925, an Alumni Association was organized and Charles Geiger, M. D., of St. Louis, Mo., elected president.

All professors and graduates of the Ensworth, Central and Northwestern Colleges, of St. Joseph, are requested to send their names to Dr. Charles W. Fassett, 115 East 31st St., Kansas City, Mo.

SMALLPOX AND VACCINATION

The smallpox figures for 1924 are now available, and they show that the United States had 55,538 cases of smallpox during that year—the largest number of any country in the world except British India. In all European and Asiatic Russia, there were only 24,067 cases reported.

These figures, especially when compared with those of other countries in the world, make it impossible for the antivaccinationists longer to uphold their contention that smallpox is a disease depending solely upon insanitary living conditions alone—unless they are willing to admit that the United States is less sanitary than Russia.

The American Association for Medical Progress, of 370 Seventh Ave., New York City, is doing a good work in teaching the necessity of vaccination and will send instructive literature to all interested persons. Better write for their pamphlets.



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ST. LOUIS DOCTOR WINS \$1000 X-RAY PRIZE

Dr. Evarts A. Graham, Professor of Surgery at the Washington University School of Medicine, St. Louis, Mo., has been awarded the Charles Lester Leonard prize of \$1000 for his development of a process known as cholecystography, making

possible accurate diagnosis by x-ray of gall-bladder and other intestinal disorders.

It consists of the injection of a solution of tetraidophenolphthalein which acts on the patient in such a way as to make the entire region of the gall-bladder visible on the x-ray plate.

CIVIL SERVICE EXAMINATIONS

Applications will be received until December 30, 1925, for appointment as Junior, Assistant and Associate Medical Officer, Medical Officer and Senior Medical Officer in the Government Service.

Salaries range from \$1,860 to \$6,000 per year.

Applications for appointment as Graduate Nurse will close December 30, 1925. Salaries range from \$1,020 "and found", to \$1,680 per year.

Applications for appointments as dietitian will also close December 30. Salaries \$1,020 "and found" to \$2,500.

Competitors will not be required to report for examination but will be rated on their education, training and experience.

Further information may be obtained from the U. S. Civil Service Commission, Washington, D. C.

MEDICAL EDUCATORS MEET

The Association of American Medical Colleges met at Charleston, South Carolina, during the last weeks of October. All of the medical schools in the United States and Canada were represented and delegates were present from a number of European medical schools.

DR. HENRY ROSE CARTER, U.S.P.H.S.

On September 14, 1925, Dr. Henry Rose Carter, Assistant Surgeon General, United States Public Health Service, died at his home in Washington, D. C., at the age of 73 years.

Dr. Carter's work as a sanitarian took him all over the world, and he was recognized as an authority on malaria and yellow fever. It was, in fact, an article of Carter's, published in 1898, that started Dr. Walter Reed upon the line of investigation which made him famous.

MEDICAL DORMITORY FOR HARVARD

The fund for building a dormitory for the students of the Harvard Medical School

was recently completed by a gift of \$575,000.00 from Harold S. Vanderbilt.

This building will house 250 students and will have a \$125,000 gymnasium included in it. This latter idea is an innovation and indicates the trend of modern thought regarding health conservation.

SCREW IN LUNGS FOR FORTY YEARS

The *New York Times* for August 23, 1925, records the case of a woman who swallowed a small screw in childhood and had it removed, by means of the bronchoscope, at Jefferson Hospital, Philadelphia, recently, after it had remained in her lung for 40 years.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

The thirty-eighth annual meeting was held at Hotel Robidoux, St. Joseph, Mo., September 30, October 1 and 2, under the presidency of Dr. John W. Martin, of Des Moines, Iowa.

The following officers were elected for the ensuing year:

President—A. D. Dunn, M. D., Omaha, Nebr.

First Vice-President—H. W. Carle, M. D., St. Joseph, Mo.

Second Vice-President—M. A. Tinley, M. D., Council Bluffs, Iowa.

Secretary—Charles Wood Fassett, M. D., Kansas City, Mo.

Treasurer—Oliver C. Gebhart, M. D., St. Joseph, Mo.

The next meeting to be held in Council Bluffs, Iowa, 1926.

VANDERBILT UNIVERSITY'S MEDICAL BUILDINGS

Vanderbilt University celebrated its fiftieth anniversary October 15 to 18. The main feature of this celebration was the formal opening of its new \$3,000,000 medical school.

WATER SUPPLY ON FARMS

The water supply of most farms is inadequate or unsatisfactory.

Physicians who work in the country should be able to give sound advice on such sanitary matters.

Farmers' Bulletin 1448, contains much valuable information concerning wells, cisterns, springs, pumps, hydraulic rams,

water tanks, disinfection of drinking water, and the planning and installation of a water system. Copies may be obtained free, while the supply lasts, by writing to the United States Department of Agriculture, Washington, D. C.

EFFECTS OF TOBACCO

So far as the rather meager figures go (353 students are included), recent tests made at Antioch College, Yellow Springs, Ohio, tend to show that the use of tobacco produces no marked or permanent effect upon the blood pressure, pulse rate or lung capacity of the smokers, but does produce a distinct reduction in their standards of scholarship.

NEW HOSPITALS FOR CLEVELAND

The new Babies' and Childrens' Hospital and Maternity Hospital, of Cleveland, Ohio, were dedicated on October 28, 1925. These buildings were erected after a study of similar hospitals all over the world, and are said to be the finest of their kind. Wherever the walls of the buildings are not of glass they are treated inside with "acoustic plaster," which deadens noise, including that made by crying children.

NOTICE

We received a very interesting little article on the treatment of pneumonia in an envelope post marked Pekin, Ill., but as no name was to be found on the envelope or on the communication itself, we are unable to use it as we do not publish articles anonymously unless we know the author and there is some good reason for such action.

If the doctor who sent us this article will communicate with us, we will be glad to publish it later.

COMMUNITY AND HEALTH DAY

Community and Health Day was celebrated in many parts of the country on Saturday, November 21.

The three slogans for this day are:

A square deal for the country boy and girl.
A sound mind in a sound body.
Visit your neighbor today.

The objects of this movement are:

- 1.—The school is a community center.
- 2.—Equality of opportunity for every American boy and girl.
- 3.—Public library service for every community.
- 4.—Proper rest and food for children.
- 5.—A health officer for every community.
- 6.—Adequate parks for city, state and nation.

Better write to the Bureau of Education, Department of the Interior, Washington, D. C., for information about this important educational service.

NEW HOSPITAL FOR MICHIGAN

The dedication exercises for the new University Hospital, at Ann Arbor, Mich., were held November 19 and 20, 1925. Among the speakers were Dr. Victor C. Vaughan, of Washington, D. C., who was for 30 years dean of the Medical School of the University of Michigan; Dr. Wm. J. Mayo, of Rochester, Minn., who was graduated from the Medical School in 1883; and Dr. James B. Herrick, of Chicago, who took his A.B. degree at Ann Arbor.

The new hospital provides 700 beds, making the total bed capacity of the University Hospitals 1,150, and embodies the very latest and most approved ideas in hospital construction. It is, in all probability, the largest and best equipped teaching hospital in the country.



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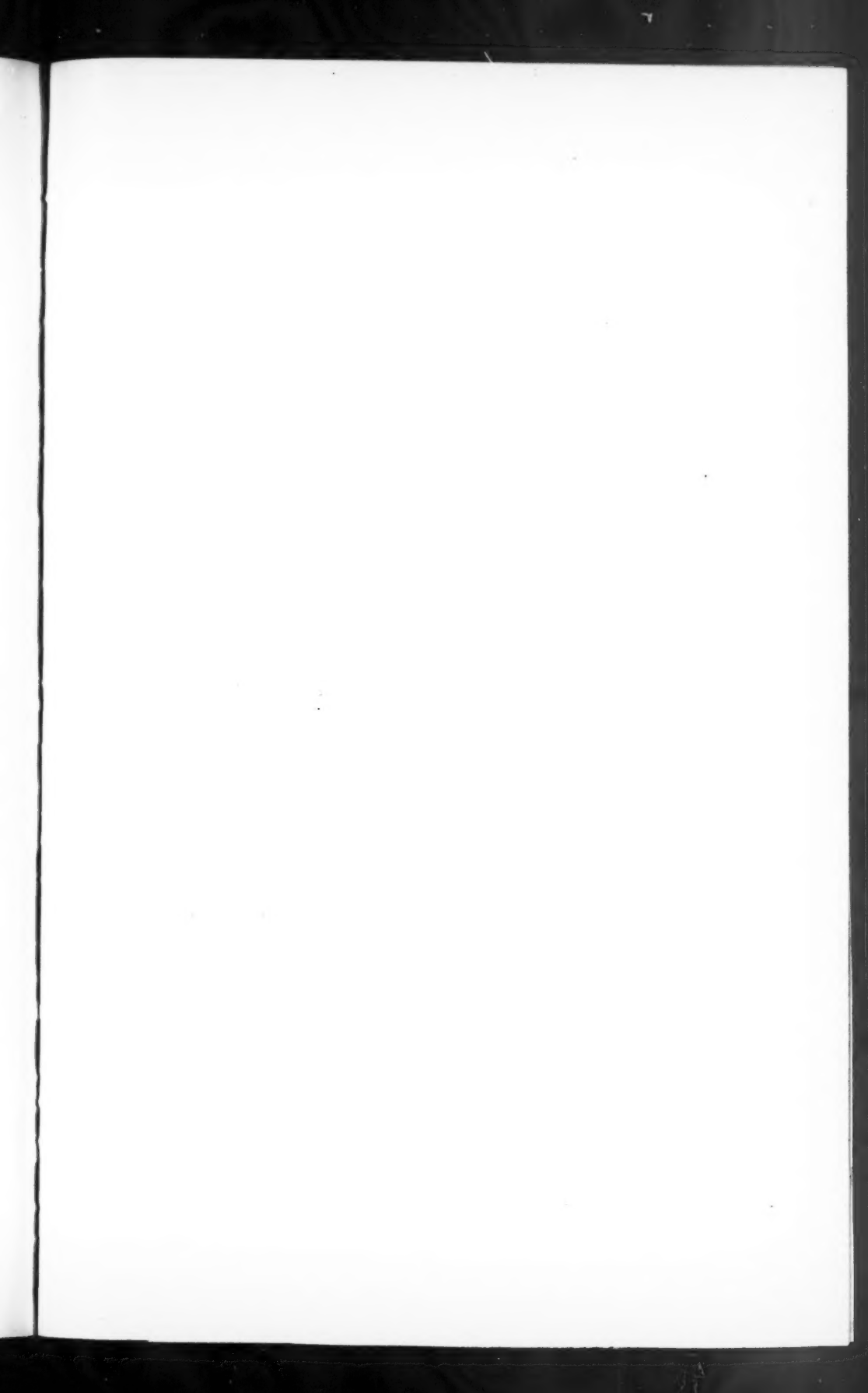
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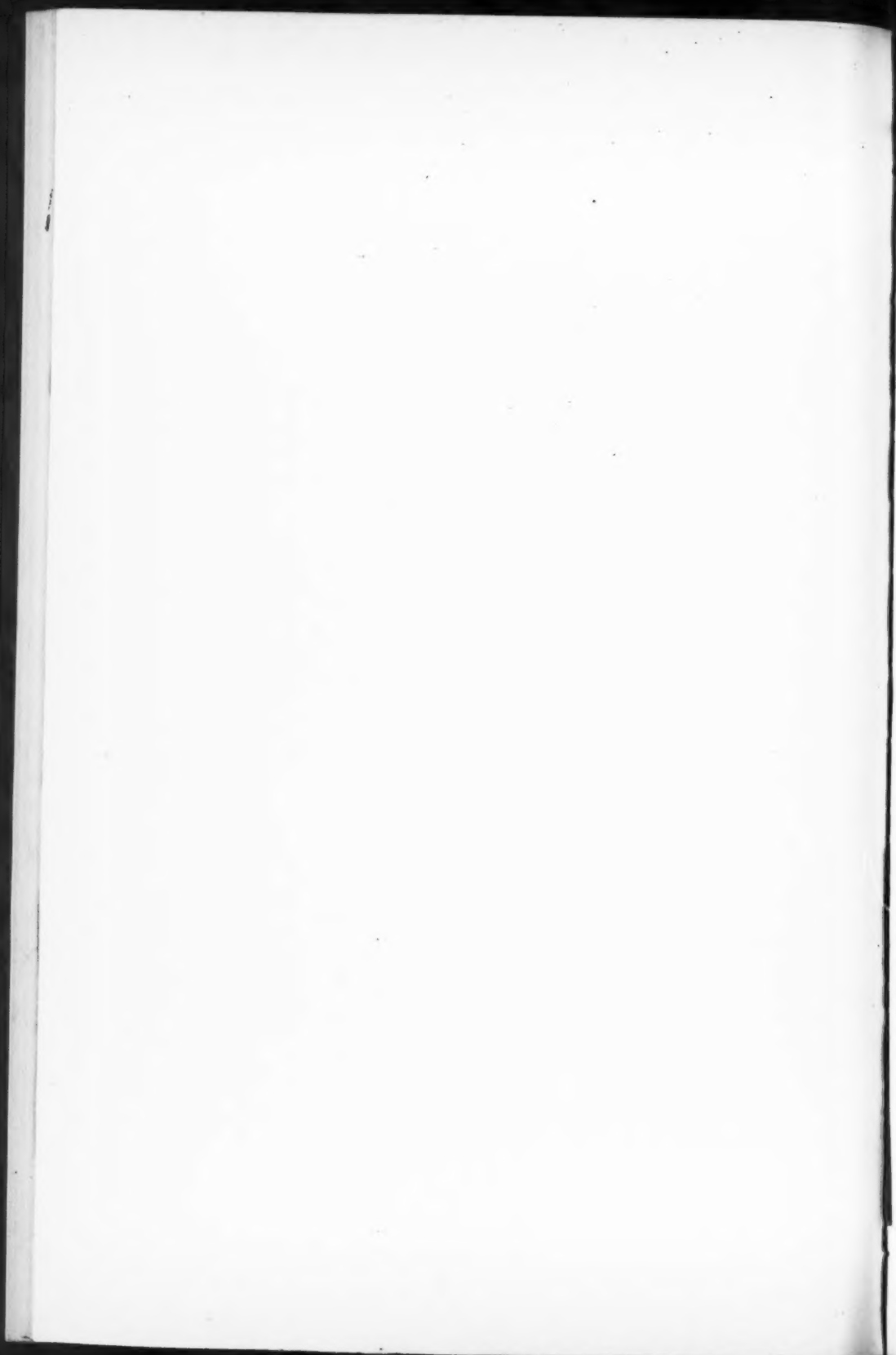
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| X- 63 | Arsenauro and Mercauro. 100-page booklet. Parmele Pharmacal Co. | X-413 | Preliminary Report on the use of Diallylbarbituric Acid and Ethyl Morphine in Obstetrics, by Lyle G. McNeile, M. D. 8-page booklet. Ciba Company, Inc. |
| X- 84 | Storm Binder and Abdominal Supporter. 4-page folder. Dr. Katherine L. Storm. | X-414 | Habit-Time. 24 - page booklet. Deshell Laboratories. |
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- X-590 Journal of Intravenous Therapy. New York Intravenous Laboratory.
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- X-593 Dry Milk in Infant Feeding by Earl V. Wiedman, B.Sc., M.D. The Dry Milk Co.
- X-594 The Uses of Physiotherapy. No. 1. 12-pages. H. G. Fischer & Co., Inc.
- X-595 The Electron, November, 1925. McIntosh Electrical Corp.
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- X-599 Loeser's Intravenous Solution of Calcium Chloride. New York Intravenous Laboratory.
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